

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

FORM 10-K

(Mark One)

Annual Report Under Section 13 Or 15(d) Of The Securities Exchange Act Of 1934

For the fiscal year ended **December 31, 2014**

or

Transition Report Under Section 13 Or 15(d) Of The Securities Exchange Act Of 1934

For the transition period from \_\_\_\_ to \_\_\_\_

**COMMISSION FILE NUMBER: 000-52446**

**ACTINIUM PHARMACEUTICALS, INC.**  
(Exact name of registrant as specified in its charter)

**Delaware**

(State or other jurisdiction of  
incorporation or organization)

**88-0378336**

(I.R.S. Employer  
Identification No.)

**546 5<sup>th</sup> Avenue, 14<sup>th</sup> fl.**  
**New York, NY 10036**

(Address of principal executive offices)(Zip Code)

**(732) 243-9495**

Registrant's telephone number, including area code

Indicate by check mark if the registrant is a well-known seasoned issuer, as defined in Rule 405 of the Securities Act. Yes  No

Indicate by check mark if the registrant is not required to file reports pursuant to Section 13 or Section 15(d) of the Exchange Act. Yes  No

Indicate by check mark whether the registrant: (1) has filed all reports required to be filed by Section 13 or 15(d) of the Securities Exchange Act of 1934 during the preceding 12 months (or for such shorter period that the registrant was required to file such reports), and (2) has been subject to such filing requirements for the past 90 days. Yes  No

Indicate by check mark whether the registrant has submitted electronically and posted on its corporate website, if any, every Interactive Date File required to be submitted and posted pursuant to Rule 405 of Regulation S-T (Section 232.405 of the chapter) during the preceding 12 months (or for such shorter period that the registrant was required to submit and post such files). Yes  No

Indicate by check mark if disclosure of delinquent filers pursuant to Item 405 of Regulation S-K is not contained herein, and will not be contained, to the best of registrant's knowledge, in definitive proxy or information statements incorporated by reference in Part III of this Form 10-K or any amendment to this Form 10-K.

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

Accelerated filer

Non-accelerated filer  (Do not check if a smaller reporting company)

Smaller reporting company

Indicate by check mark whether the registrant is a shell company (as defined in Rule 126-2 of the act): Yes  No

The aggregate market value of voting stock held by nonaffiliates of the registrant as of June 30, 2014, the last business day of the registrant's most recently completed second fiscal quarter, based on the closing price of the common stock on the NYSE MKT on June 30, 2014 was \$199,287,826.

As of March 16, 2015, 35,482,076 shares of common stock, \$0.001 par value per share, were outstanding.

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## CAUTIONARY NOTE REGARDING FORWARD-LOOKING STATEMENTS

This Annual Report on Form 10-K (this “Report”) contains forward looking statements that involve risks and uncertainties, principally in the sections entitled “Description of Business,” “Risk Factors,” and “Management’s Discussion and Analysis of Financial Condition and Results of Operations.” All statements other than statements of historical fact contained in this prospectus, including statements regarding future events, our future financial performance, business strategy and plans and objectives of management for future operations, are forward-looking statements. We have attempted to identify forward-looking statements by terminology including “anticipates,” “believes,” “can,” “continue,” “could,” “estimates,” “expects,” “intends,” “may,” “plans,” “potential,” “predicts,” “should,” or “will” or the negative of these terms or other comparable terminology. Although we do not make forward looking statements unless we believe we have a reasonable basis for doing so, we cannot guarantee their accuracy. These statements are only predictions and involve known and unknown risks, uncertainties and other factors, including the risks outlined under “Risk Factors” or elsewhere in this prospectus, which may cause our or our industry’s actual results, levels of activity, performance or achievements expressed or implied by these forward-looking statements. Moreover, we operate in a very competitive and rapidly changing environment. New risks emerge from time to time and it is not possible for us to predict all risk factors, nor can we address the impact of all factors on our business or the extent to which any factor, or combination of factors, may cause our actual results to differ materially from those contained in any forward-looking statements. All forward-looking statements included in this document are based on information available to us on the date hereof, and we assume no obligation to update any such forward-looking statements.

You should not place undue reliance on any forward-looking statement, each of which applies only as of the date of this prospectus. Before you invest in our securities, you should be aware that the occurrence of the events described in the section entitled “Risk Factors” and elsewhere in this prospectus could negatively affect our business, operating results, financial condition and stock price. Except as required by law, we undertake no obligation to update or revise publicly any of the forward-looking statements after the date of this prospectus to conform our statements to actual results or changed expectations.

### **PART I**

#### **Item 1. Business.**

##### **Business Overview**

We are a biopharmaceutical company focused on the \$57.1 billion market for cancer drugs, based on “The Global Use of Medicines: Outlook Through 2015 Report by the IMS Institute for Healthcare Informatics, May 2011”. Our most advanced products are Actimab™-A, an antibody-drug construct containing actinium 225 (Ac-225), currently in human clinical trials for acute myeloid leukemia (AML) and Iomab™-B, an antibody-drug construct containing iodine 131 (I-131), used in myeloconditioning for hematopoietic stem cells transplantation (HSCT) in various indications. We are currently preparing for a Phase 3 trial of Iomab™-B for bone marrow conditioning for HSCT in relapsed and refractory AML patients age of 55 and older, which upon successful completion of our clinical trials we intend to submit for marketing approval. We are currently also considering filing an application with the U.S. Food and Drug Administration (FDA) for breakthrough therapy designation for Actimab™-A and/or Iomab™-B. We are developing our cancer drugs using our expertise in radioimmunotherapy. In addition, our Ac-225 based drug development relies on the patented Alpha Particle Immunotherapy Technology (APIT) platform technology co-developed with Memorial Sloan Kettering Cancer Center (MSKCC), whose indirect subsidiary, Actinium Holdings Ltd., is a significant stockholder in our company. The APIT technology couples monoclonal antibodies (mAb) with extremely potent but comparatively safe alpha particle emitting radioactive isotopes, in particular actinium 225 and bismuth 213. The final drug construct is designed to specifically target and kill cancer cells while minimizing side effects. We intend to develop a number of products for different types of cancer and derive revenue from partnering relationships with large pharmaceutical companies and/or direct sales of its products in specialty markets in the United States.

##### **Business Strategy**

We intend to potentially develop our most advanced clinical stage product candidates through approval in the case of Iomab™-B, and up to and including a Phase 2 proof of concept human clinical trial (a trial designed to provide data on the drug’s efficacy) in the case of Actimab™-A. If these efforts are successful, we may elect to commercialize Iomab™-B on our own or with a partner in the United States and/or outside of the United States to out-license the rights to develop and commercialize the product to a strategic partner. In the case of Actimab™-A, we will most likely seek to enter into strategic partnerships whereby the strategic partner(s) co-fund(s) further human clinical trials of the drug that are needed to obtain regulatory approvals for commercial sale within and outside of the United States. In parallel, we intend to identify and begin initial human trials with additional actinium-225 product candidates in other cancer indications. We intend to retain marketing rights for our products in the United States whenever possible and out-license marketing rights to our partners for the rest of the world. We may also seek to in license other applicable opportunities should such technology become available.

## ***Market Opportunity***

We are competing in the marketplace for cancer treatments estimated to reach over \$83-88 billion in 2016 sales, according to “The Global Use of Medicines: Outlook Through 2016 Report by the IMS Institute for Healthcare Informatics, July 2012”. While surgery, radiation and chemotherapy remain staple treatments for cancer, their use is limited by the fact that they often cause substantial damage to normal cells. On the other hand, targeted monoclonal antibody therapies exert most or all of their effect directly on cancer cells, but often lack sufficient killing power to eradicate all cancer cells with just the antibody. A new approach for treating cancer is to combine the precision of antibody-based targeting agents with the killing power of radiation or chemotherapy by attaching powerful killing agents to precise molecular carriers called monoclonal antibodies (mAb). We use mAbs labeled with radioisotopes to deliver potent doses of radiation directly to cancer cells while sparing healthy tissues. The radioisotopes we use are the alpha emitter Ac-225 and the beta emitter I-131. I-131 is among the best known and well characterized radioisotopes. It is used very successfully in treatment of papillary and follicular thyroid cancer as well as other thyroid conditions. It is also attached to a monoclonal antibody in treatment of Non-Hodgkin’s Lymphoma (NHL). It is also used experimentally with different carriers in other cancers. Ac-225 has many unique properties and we are a leader in developing this alpha emitter for clinical applications using our proprietary Alpha particle Immunotherapy (APIT) technology.

Our most advanced products are Actimab™-A, Ac-225 labeled mAb for treatment of newly diagnosed AML, a cancer of the blood, in patients ineligible for currently approved therapies; and Iomab™-B, I-131 labeled mAb for preparation of relapsed and refractory AML patients for HSCT. Iomab™-B offers a potentially curative treatment for these patients, most of whom do not survive beyond a year after being diagnosed with this condition. Iomab™-B has also demonstrated efficacy in HSCT preparation for other blood cancer indications, including myelodysplastic syndrome (MDS), acute lymphoblastic leukemia (ALL), Hodgkin’s Lymphoma, and Non-Hodgkin’s Lymphoma (NHL). These are all follow-on indications for which Iomab™-B can be developed and it is our intention to explore these opportunities if and when financing becomes available. We believe the aggregate worldwide market potential for the treatment of AML, MDS, ALL, Hodgkin’s Lymphoma, multiple myeloma and NHL is approximately \$4.1 billion.

Other potential product opportunities in which a significant amount of preclinical work is being undertaken include metastatic colorectal cancer, metastatic prostate cancer and antiangiogenesis which reduces the blood supply to solid tumors. We believe the worldwide market potential for the treatment of metastatic colorectal cancer is approximately \$4.8 billion, and we believe the worldwide market potential for the treatment of metastatic prostate cancer is approximately \$6.0 billion. We also believe the worldwide market potential for the treatment of Glioblastoma Multiforme, a potential indication based on antiangiogenesis approach, is approximately \$1.1 billion.

We believe that our biggest market opportunity lies in the applicability of our APIT platform technology to a wide variety of cancers. A broad range of solid and blood borne cancers can be potentially targeted by mAbs to enable treatment with the APIT technology. The APIT technology could potentially be applied to mAbs that are already approved by the FDA to create more efficacious and/or safer drugs (“biobetters”).

In November 2014, the FDA granted orphan-drug designation for Actimab™-A. The FDA, through its Office of Orphan Products Development, grants orphan status to drugs and biologic products that are intended for the safe and effective treatment, diagnosis, or prevention of rare diseases or disorders that affect fewer than 200,000 people in the United States. Orphan drug designation provides a drug developer with certain benefits and incentives, including a period of marketing exclusivity if regulatory approval is ultimately received for the designated indication; potential tax credits on United States clinical trials; eligibility for orphan drug grants; and waiver of certain administrative fees.

## **Our Corporate History and Background**

We were formed as a Nevada corporation on October 6, 1997, originally under the name Zurich U.S.A., Inc. On July 10, 2006, we changed our name to Cactus Ventures, Inc. and began pursuing our business of marketing sunglasses. The Company encountered numerous problems with various vendors and ceased its operations. The Company shifted its efforts to seeking a business combination opportunity with a business entity, and negotiated a merger of a target company into the Company. Upon ceasing its operations, the Company was considered a “blank check” or “Shell” company as such term is defined under the Securities Act. Upon completing the Share Exchange (as defined below), the Company ceased being considered a “blank check” or “Shell” company and is now a clinical-stage biopharmaceutical company developing certain cancer treatments.

On April 11, 2013, the change of domicile from the State of Nevada to the State of Delaware and the change of Cactus Ventures, Inc.’s name from Cactus Ventures, Inc. to Actinium Pharmaceuticals, Inc. became effective in accordance with Articles of Merger filed with the State of Nevada and a Certificate of Merger filed with the State of Delaware. In connection with the name change we also changed (i) the name of our subsidiary Actinium Pharmaceuticals, Inc. to Actinium Corporation, (ii) our par value to \$0.001 per share, and (iii) the number of authorized shares of preferred stock to 10 million shares. Effective April 18, 2013 our new trading symbol became ATNM. On September 25, 2013, we merged with our subsidiary, Actinium Corporation. In January 2014, we increased our authorized shares of common stock to 200 million shares and our authorized shares of preferred stock to 50 million shares.

## *Acquisition of Actinium*

On December 28, 2012, Actinium Pharmaceuticals, Inc. (“Actinium”) completed a share exchange with Cactus, whereby Cactus acquired 21% of the issued and outstanding capital stock of Actinium Corporation from the shareholders of Actinium Corporation (the “Actinium Shareholders”) in exchange for the issuance of 4,333,489 shares of Common Stock of the Company to the Actinium Shareholders (the “Share Exchange”). As part of the Share Exchange, Actinium Corporation paid \$250,000 to the shareholders of Cactus before the consummation of the Share Exchange.

The Share Exchange was treated as a recapitalization effected through a share exchange, with Actinium Corporation as the accounting acquirer and the Company the accounting acquiree. Unless the context suggests otherwise, when we refer in this Report to business and financial information for periods prior to the consummation of the Share Exchange, we are referring to the business and financial information of Actinium Corporation.

As a result of the Share Exchange, the Company assumed the business and operations of Actinium Corporation. On April 11, 2013, the change of domicile from the State of Nevada to the State of Delaware and the change of Cactus Ventures, Inc.’s name from Cactus Ventures, Inc. to Actinium Pharmaceuticals, Inc. became effective in accordance with Articles of Merger filed with the State of Nevada and a Certificate of Merger filed with the State of Delaware. Effective April 18, 2013, our new trading symbol is ATNM.

As we are a “reporting company” under the Exchange Act of 1934, it is required to file periodic filings with the SEC.

On March 11, 2013, Actinium Corporation continued its Share Exchange with the Company, whereby we acquired an additional 36% of the issued and outstanding capital stock of Actinium Corporation from the Actinium Corporation Shareholders in exchange for the issuance of 7,756,840 shares of Common Stock of the Company to the Actinium Shareholders. On August 22, 2013, Actinium Corporation continued its Share Exchange with the Company, whereby the Company acquired an additional 38.2% of the issued and outstanding capital stock of Actinium Corporation from the Actinium Corporation Shareholders in exchange for the issuance of 6,383,475 shares of Common Stock of the Company to the Actinium Shareholders. On September 25, 2013 in accordance with a Certificate of Ownership Merging Actinium Corporation into the Company, the Company merged into itself Actinium Corporation, and Actinium Corporation ceased to exist. As a result of the merger, Actinium Corporation stock owned by the Company has been cancelled and each share of Actinium Corporation not owned by the Company was exchanged for 0.333 shares of Company common stock.

## *Corporate History of Actinium*

Actinium Corporation was incorporated in 2000 in the state of Delaware. Until the Share Exchange, Actinium Corporation was a clinical-stage, privately held biopharmaceutical company with:

- Two clinical-stage products, Iomab™-B and Actimab™-A, in development for blood borne cancers;
- Preclinical data in additional cancer indications;
- A proprietary technology platform for novel radioimmunotherapy cancer treatments; and
- A proprietary process for manufacturing of the alpha particle emitting radioactive isotope actinium 225 (Ac-225).

Iomab™-B has completed a Phase 1/2 design trial as a preparatory regimen in conjunction with fludarabine and reduced intensity radiation conditioning in patients who are ineligible for standard myeloablative conditioning for HSCT and the Company expects it to enter a regulatory approval trial in 2015, subject to input and approval from the FDA in regard to drug manufacturing, a trial data management plan and documentation submission. The FDA has previously agreed to the proposed pivotal trial design. The preparatory Phase 1/2 trial was conducted in 68 human subjects at the Fred Hutchinson Cancer Research Center (FHCC) in Seattle, WA. Currently, the Investigational New Drug (IND) for this drug is held by the licensor, FHCC. We intend to file our own separate IND for the purpose of conducting a Phase 3 trial in 2015. Actimab™-A is currently in a Phase 1/2 trial in newly diagnosed elderly AML patients. In addition, using our patented APIT platform and via our collaboration with MSKCC, the Company has preclinical data on potential drug candidates in several other cancer indications and expects to further develop these into clinical stage drug candidates.

Actinium Corporation has one wholly owned subsidiary, MedActinium, Inc., a Delaware corporation, which is party to certain isotope related licenses and contracts on which we rely on.

Upon Actinium Corporation's formation in 2000, it acquired Pharmactinium, Inc. and MedActinium, Inc., and through Pharmactinium, Inc. acquired certain rights to the APIT platform. Core technology patents were in-licensed from N.V. Organon which also provided seed funding. Pharmactinium, Inc. was party to a research and development agreement with MSKCC beginning in 1996. In 2002, this agreement and relationship was significantly expanded and now includes research and development, preclinical development, clinical trials and commercial technology licenses. In 2007, Pharmactinium, Inc. was merged with and into the Company. In 2007, the Company also acquired its sister company, Actinium Pharmaceuticals, Limited (Bermuda) (the "Bermuda Company"), by a merger of the Bermuda Company into the Company and thereby also acquired certain patent licenses relating to APIT previously licensed by the Bermuda Company to the Company.

In 2000, we also began what has become a long term relationship with General Atlantic Investments Limited (GAIL), an entity which provided most of the Company's investment capital from 2000 through 2010, totaling \$40.8 million. In 2010, the parent of GAIL contributed and transferred its ownership of GAIL (now renamed Actinium Holdings, Limited), whose only asset at that time was the shares of API, to an indirect subsidiary of MSKCC. In January 2012, the Company closed on approximately \$6.7 in net funding through the sale of our stock and a Senior Convertible Note financing. On December 19, 2012, Actinium completed a private offering of units, consisting of common stock, Series A warrants and Series B warrants. The price per unit was \$1.65 for aggregate net proceeds of \$4.5 million. The Series A Warrants had a 120 day term from January 28, 2013 and were exercisable for an aggregate of up to 3,118,968 shares of the Company's common stock at an initial per share exercise price of \$1.65, subject to adjustment. The Series A Warrants expired on May 28, 2013. The Series B Warrants have a five year term from January 28, 2013 and are exercisable for an aggregate of up to 1,559,484 shares of our common stock at an initial per share exercise price of \$2.48, subject to adjustment. In the second quarter of 2013, we issued shares of common stock pursuant to the exercise of A-Warrants originally issued in connection with a private placement that closed in December 2012. The warrants were exercised at \$1.65 per share, resulting in gross proceeds of \$3.5 million for us.

Our executive office is located at 546 Fifth Avenue, 14th Floor, New York, NY 10036 and telephone number is (646) 459-4201. Our website address is <http://www.actiniumpharma.com>. Except as set forth below, the information on our website is not part of this Annual Report on Form 10-K.

#### **Summary of Scientific and Business Achievements:**

Our key scientific and business achievements to date include:

- Iomab-B related:
  - In-licensing a Phase 2 clinical stage monoclonal antibody, BC8, with safety and efficacy data in more than 250 patients in need of HSCT, currently in 7 active Phase 1 and Phase 2 clinical trials;
  - Obtaining FDA agreement to the Phase 3 trial design for Iomab-B; and
  - Commencing manufacturing development of commercial scale and quality production of Iomab-B.
  
- Actimab-A related:
  - Commencing a Company sponsored multi-center Phase 1/2 clinical trial for Actimab<sup>TM</sup>-A in elderly AML patients;
  - Developing and organizing manufacturing of Actinium's lead drug candidate Actimab<sup>TM</sup>-A which was accepted by the FDA for multi-center human use;
  - Supporting three physician sponsored clinical trials, including a Phase 1 and a Phase 1/2 trial with the alpha emitting radioactive isotope bismuth 213 (Bi-213) based AML drug and a Phase I clinical trial with the alpha emitting radioactive isotope actinium 225 (Ac-225) based AML drug; and
  - In-licensing the AML targeting monoclonal antibody known as HuM195 or Lintuzumab.

- General operations:
  - Establishing clinical and preclinical development relationships with world-class institutions such as MSKCC, FHCRC and University of Texas MD Anderson Cancer Center (the MD Anderson Cancer Center relationship includes clinical trials only), as well as leading clinical experts in the fields of AML and HSCT;
  - Securing rights to an intellectual property estate that covers key aspects of the Company's proprietary technology platform;
  - Supporting several pipeline projects, including preclinical experiments in metastatic prostate cancer, metastatic colon cancer, antiangiogenesis and breast cancer models;
  - Maintaining our contractual relationship with ORNL of the DOE that provides us access to the largest known supply reserves of actinium 225; and
  - Successfully developing commercial production methods for actinium 225.

## Clinical Trials

### Actimab™-A

Actimab™-A is currently in multicenter Phase 1/2 clinical trial in AML. It consists of the monoclonal antibody Lintuzumab and alpha emitting radioisotope actinium 225 (Ac-225). The indication in the ongoing trial is newly diagnosed AML patients over the age of 60.

Previous clinical trials leading to this trial included:

- Phase 1 clinical trial with Bismab-A, the first generation product consisting of the same monoclonal antibody Lintuzumab and Bi-213 alpha emitter, a daughter of Ac-225;
- Phase 1/2 clinical trial with Bismab-A, the first generation product consisting of the same monoclonal antibody Lintuzumab and Bi-213 alpha emitter, a daughter of Ac-225; and
- Dose escalating pilot Phase 1 clinical trial with Actimab™-A, the current product consisting of the Lintuzumab monoclonal antibody and Ac-225 alpha emitter.

Completed Actimab™-A related clinical trials outcomes:

- The Phase 2 arm of the Bismab-A drug study has shown signs of the drug's efficacy and safety, including reduction in peripheral blast counts and complete responses in some patients. Bi-213 is a daughter, i.e., product of the degradation of Ac-225, with cancer cell killing properties similar to Ac-225 but is less potent. The Phase 1 Actimab™-A trial at MSKCC with a single-dose administration of Actimab™-A showed elimination of leukemia cells from blood in 67% of all evaluable patients who received a full dose and in 83% of those treated at dose levels above 0.5 microcuries per kilogram ( $\mu\text{Ci}/\text{kg}$ ), and eradication of leukemia cells in both blood and bone marrow in 20% of all evaluable patients and 25% of those treated at dose levels above 0.5  $\mu\text{Ci}/\text{kg}$ . Maximum tolerated single dose in this trial was established at 3  $\mu\text{Ci}/\text{kg}$ .

High potency means that a relatively low amount of drug is needed to produce a given effect. In preclinical and Phase 1 clinical studies, Actimab-A ( $^{225}\text{Ac}$ -lintuzumab) has demonstrated at least 500-1000 times higher potency than the first-generation predecessor ( $^{213}\text{Bi}$ -lintuzumab) upon which it is based. This difference is due to intrinsic physicochemical properties of Actimab-A that were first established *in vitro*, in which Actimab-A killed multiple cell lines at doses at least 1000 times lower (based on LD50 values) than Bismab-A analogs. Key factors in Actimab-A's higher potency are the yield of 4 alpha-emitting isotopes per  $^{225}\text{Ac}$  (compared to 1 alpha decay for bismuth 213) and much longer half-life (10 day for  $^{225}\text{Ac}$  vs 46 minutes for  $^{213}\text{Bi}$ ).

In preclinical animal models, doses in the nanocurie range prolonged survival. In humans, Actimab-A was previously studied in a Phase I monotherapy trial of relapsed or refractory AML patients at MSKCC. Dose levels in that study re-confirmed the substantially higher potency of Actimab-A, as compared to equivalent dosing of the first-generation Bismab-A ( $^{213}\text{Bi}$ -lintuzumab) construct, which had nevertheless established safety and efficacy in a Phase 1/2 trial in high-risk AML with cytoreduction.

Sources: Jurcic JG. Targeted Alpha-Particle Immunotherapy with Bismuth-213 and Actinium-225 for Acute Myeloid Leukemia. *J. Postgrad Med Edu Res* 2013, 47(1):14-17; ; JG Jurcic et al, Phase 1 Trial of the Targeted Alpha- Particle Nano-Generator Actinium-225 (225Ac)-Lintuzumab in Acute Myeloid Leukemia (AML) *J Clin Oncol* 29:2011 (suppl, abstr 6516); McDevitt MR et al, “Tumor Therapy with Targeted Atomic Nanogenerators” *Science* 2001, 294:1537—1540; Rosenblat TL et al, “Sequential cytarabine and alpha-particle immunotherapy with bismuth- 213-lintuzumab (HuM195) for acute myeloid leukemia” *Clin Cancer Res.* 2010, 16(21):5303-5311; Jurcic JG et al. “Phase I Trial of the Targeted Alpha-Particle Nano-Generator Actinium-225 (225Ac)-Lintuzumab in Acute Myeloid Leukemia (AML)” *Blood (ASH Meeting Abstracts)* 2012.

Ongoing Actimab™-A trial:

We have commenced our first company sponsored Phase 1/2 multi-center trial with fractionated (two) doses of Actimab™-A, our lead product candidate for treatment of elderly AML that consists of an AML specific monoclonal antibody (HuM195, also known as Lintuzumab™) and the actinium 225 radioactive isotope attached to it. We are conducting this trial at world-class cancer institutions such as MSKCC, Johns Hopkins Medicine, University of Pennsylvania Health System, Fred Hutchinson Cancer Center and MD Anderson Cancer Center.

Bismab™-A trials and the Phase 1 Actimab™-A trial were focused on relapsed, refractory and other difficult to treat acute myeloid leukemia patients. The current multicenter Phase 1/2 trial is focused on newly diagnosed AML patients who have historically had better outcomes. In addition, the new trial includes low doses of chemotherapy with the goal of further improving patient outcomes.

Iomab™-B

Iomab™-B is our product currently in preparation for a pivotal Phase 3 multicenter clinical trial. It consists of the monoclonal antibody BC8 and beta emitting radioisotope iodine 131 (I-131). The indication for that trial is bone marrow conditioning for HSCT in relapsed and refractory AML patients over the age of 55.

Previous Iomab™-B clinical trials leading to the planned Phase 3 trial currently in preparation included:

<b>Indications</b>	<b>N</b>	<b>Key Findings</b>
AML, MDS, ALL (adult)	34	-7/34 patients with median disease free state (DFS) of 17 years. -18/34 patients in remission at day 80
AML >1st remission (adult)	23	-15/23 in remission at day 28
AML 1st remission (age 16-50)	43	-23/43 DFS from 5-16 years -30/43 in remission at day 28 -33/43 in remission at day 80
High-risk MDS, advanced AML (age 50+)	68 in dose escalation study 31 treated at MTD	-CR (complete remission) in all patients -1 yr survival ~40% for all patients -1 yr survival ~45% for pts treated at MTD maximum tolerated dose)
High-risk MDS, AML (age 18–50)	14 in dose escalation	All patients achieved full donor chimerism by day 28 post-transplant
High-risk MDS, AML –haploidentical donors (adult)	8 in dose escalation	-6/8 treated patients achieved CR by day.28 -8/8 patients 100% donor chimerism by day28

Ongoing Iomab<sup>TM</sup>-B clinical trials include:

<b>Indications</b>	<b>Phase</b>
Relapsed and refractory Hodgkin Lymphoma and NHL (adult)	Phase 1
Advanced AML, ALL and MDS (adult)	Phase 2
AML 1st remission (age 16-50)	Phase 2
High-risk MDS, advanced AML (age 16-50)	Phase 2

There are additional ongoing clinical trials with BC8 antibody labeled with yttrium 90 (Y-90).

Phase 3 Iomab<sup>TM</sup>-B clinical trial in preparation:

While we do not have a Special Protocol Assessment from the FDA with respect to our planned Phase 3 trial of Iomab<sup>TM</sup>-B, we have obtained FDA's comment and guidance on the Phase 3 clinical trial design, and the FDA has identified the following design features as generally acceptable, dependent on the results of the trial:

- Single pivotal study, pending trial results;
- Patient population: refractory AML patients age of 55 and older, where refractory is defined as either primary failure to achieve a complete remission after 2 cycles of induction therapy; relapsed after 6 months in complete remission; second or higher relapse; or relapsed disease not responding to intensive salvage therapy;
- Trial arms: study arm and control arm with physician's choice of conventional care with curative intent; and
- Trial size: 150 patients total (75 patients per arm).

For the twelve months ended December 31, 2014, we had no revenue and our net loss was approximately \$24.7 million. For the twelve months ended December 31, 2013, we had no revenue and our net loss was approximately \$10.8 million.

## **Operations**

Our current operations are primarily focused on furthering the development of our lead clinical drug candidates Actimab<sup>TM</sup>-A and Iomab<sup>TM</sup>-B. In the case of Actimab<sup>TM</sup>-A, key ongoing activities include progressing a multi-center Phase 1/2 trial, support for an ongoing Phase 1 clinical trial at MSKCC, managing isotope and other materials supply chain, and managing the manufacturing of the finished drug candidate product. We have secured access to much of the currently available world reserves of Ac-225 and Bi-213 through a renewable contractual arrangement with the United States Department of Energy (DOE). We project that these quantities are sufficient to support early stages of commercialization of alpha isotopes based products. The Company has also developed its own proprietary process for industrial scale Ac-225 production in a cyclotron in quantities adequate to support full product commercialization.

Operations related to Iomab<sup>TM</sup>-B include planning for a Phase 3 pivotal trial (a trial that leads to registration trial marketing approved by the FDA) which will include development of commercial scale manufacturing to be suitable for an approval trial and preparation of appropriate regulatory submissions.

For the years ended December 31, 2014 and 2013, we spent approximately \$12.3 million and \$3.1 million, respectively, on research and development activities. These expenditures consisted of materials maintenance and purchases, supply chain development and implementation, drug candidate manufacturing expenditures, clinical trials costs and intellectual property portfolio related expenses. Since we have no customers, none of the costs of such research and development activities were borne by our customers.

Failure to raise additional equity or debt funding in the amounts necessary to complete our programs and/or failure to out license our programs on the projected terms may result in a delay of our projected development plan or our inability to complete one or more of the planned programs.

**Summary of Material Agreements Related to Our Business**

The Company has entered into license and research and development agreements with third parties under which the Company is obligated to make upfront payments as well as milestone and royalty payments. Notable inclusions in this category are:

- a. AbbVie Biotherapeutics Corp. (formerly Abbott Biotherapeutics Corp) – The Company entered into a Product Development and Patent License Agreement with AbbVie Biotherapeutics Corp. in 2003 to secure exclusive rights to a specific antibody when conjugated with alpha emitting radioisotopes. Upon execution of the agreement, the Company made a license fee payment of \$3,000,000.

The Company agreed to make milestone payments totaling \$7,750,000 for the achievement of the following agreed to and contracted milestones:

Milestones	Payments
(1) when Company initiates a Phase I Clinical Trial of a licensed product	\$ 750,000
(2) when Company initiates a Phase II Clinical Trial of a licensed product	750,000
(3) when Company initiates a Phase III Clinical Trial of a licensed product	1,500,000
(4) Biological License Application filing with U.S. FDA	1,750,000
(5) First commercial sale	1,500,000
(6) after the first \$10,000,000 in net sales	1,500,000

Under the agreement, the Company shall pay to AbbVie Biotherapeutics Corp on a country-by-country basis a royalty of 12% of net sales of all licensed products until the later of: (1) 12.5 years after the first commercial sale, or (2) when the patents expire.

The Company met its first milestone in 2012 and paid AbbVie Biotherapeutics Corp. a milestone payment of \$750,000 on July 24, 2012. The milestone payment for the Phase 1 Clinical Trial was recorded as research and development expense. The Company has not initiated a Phase 2 Clinical Trial and no payment has been made to AbbVie Biotherapeutics Corp. since the July 24, 2012 payment.

- b. Memorial Sloan Kettering Cancer Center (MSKCC) –

In February 2002, we entered into a license agreement with MSKCC that requires a technology access fee of \$50,000 upon execution, an annual maintenance fee of \$50,000 and an annual research funding of \$50,000 for as long as the agreement is in force.

We agreed to make milestone payments totaling \$2.5 million for the achievement of contracted milestones. These milestones include (i) a payment of \$750,000 upon the filing of a New Drug Application (“NDA”) or regulatory approval for each licensed product and (ii) a payment of \$1,750,000 upon the receipt of regulatory approval from the U.S. FDA for each licensed product. All the milestones and payments are related to products based on alpha emitter based products. Currently, the only such product in clinical development is Actinmab-A. As of December 31, 2014, we owed MSKCC approximately \$189,000.

Under the agreement, we agreed to pay to MSKCC on a country-by-country basis a royalty of 2% of net sales of all licensed products until the later of: (1) 10 years from the first commercial sale, or (2) when the patents expire. We expect to file the NDA for regulatory approval in 2016.

- c. Oak Ridge National Laboratory (ORNL) – The Company is contracted to purchase radioactive material to be used for research and development, with a renewal option at the contract end. For 2014, the Company purchased approximately \$0.6 million of radioactive material with ORNL. During 2015, the Company signed a contract with ORNL to purchase \$0.6 million of radioactive material.
- d. AptivSolutions provides project management services for the study of the drug Ac-225-HuM195 (Actimab-A) used in the Company’s Phase 1 and Phase 2 clinical trials. The total project is estimated to cost approximately \$1.9 million and requires a 12.5% down payment of the total estimated project cost. The down payment totaling \$239,000 was paid in 2007 and 2012. On August 6, 2012, October 22, 2012 and May 16, 2013, the agreement was amended to provide for additional services. The total project is now estimated at approximately \$2.7 million. AptivSolutions bills the Company when services are rendered and the Company records the related expense to research and development costs. For the years ended December 31, 2014 and 2013, the Company incurred expenses of approximately \$388,000 and \$270,000, respectively, related to this agreement
- e. On June 15, 2012, the Company entered into a license and sponsored research agreement with Fred Hutchinson Cancer Research Center (FHCRC) to build upon previous and ongoing clinical trials, with BC8 (licensed antibody). FHCRC has currently completed Phase 1 and Phase 2 of the clinical trial and the Company intends to start preparation for a pivotal trial leading to an FDA approval. The Company has been granted exclusive rights to the BC8 antibody and related master cell bank developed by FHCRC. The cost to develop the trial will range from \$13.2 million to \$23.5 million, depending on the trial design as required by the FDA. Under the terms of the sponsored research agreement, the Company will fund the FHCRC lab with \$150,000 per year for the first two years and \$250,000 thereafter. Payments made toward funding the lab will be credited toward royalty payments owed to FHCRC in the given year. A milestone payment of \$1 million will be due to FHCRC upon FDA approval of the first drug. Upon commercial sale of the drug, royalty payments of 2% of net sales will be due to FHCRC. During the years ended December 31, 2014 and 2013, the Company recorded fees of approximately \$222,000 and \$75,000, respectively, related to this agreement
- f. On July 19, 2012, the Company entered into a clinical trial agreement with FHCRC. The Company will pay \$31,366 for each patient that has completed the clinical trial. The Company paid a start-up fee of \$19,749 in 2013. During the clinical trial additional fees apply and will be invoiced when applicable. During 2014, the Company paid approximately \$16,000 for patient enrollment.
- g. On August 28, 2012, the Company entered into a clinical trial agreement with The University of Texas M.D. Anderson Cancer Center. The total estimated cost of conducting the clinical trial is approximately \$500,000, which includes a non-refundable institutional fee of \$14,500. The estimated cost is based on treating 24 patients through 2013. Upon execution of the agreement, the Company paid \$33,946. During 2013, there was one patient treated and the Company paid \$34,383 in July 2013. During 2014, the Company recorded an expense of approximately \$102,000.
- h. On September 26, 2012, the Company entered into a clinical trial agreement with Johns Hopkins University. The Phase 1/2 clinical trial will be conducted with Actinium 225. The clinical trial will be conducted under the protocols established by the Company and pursuant to an Investigational New Drug Exemption (IND 10807) held by the Company. The Company will pay \$38,501 per patient, who has completed the clinical trial. The Company is required to pay a start-up fee of \$22,847, an annual pharmacy fee of \$2,025 and an amendment processing fee of \$500, when applicable. The Company paid the start-up fee in February 2013. During 2014, the Company recorded \$30,990 expense for this agreement.
- i. On November 21, 2012, the Company entered into a clinical trial agreement with the University of Pennsylvania. The Phase 1/2 clinical trial will be conducted with Actinium 225. The clinical trial will be conducted under the protocols established by the Company and pursuant to an Investigational New Drug Exemption (IND 10807) held by the Company. The Company will pay \$31,771 per patient, who has completed the clinical trial. The Company will be required to pay a start-up fee of \$16,000 and additional administrative fees, when applicable. The Company accrued the \$16,000 fee at December 31, 2013 and paid the fee in January 2014. During 2014, the Company recorded an expense of approximately \$32,000.

- j. On February 27, 2014, the Company entered into a manufacturing agreement with Goodwin Biotechnology Inc. (“Goodwin”). Goodwin will oversee the current Good Manufacturing Practices (cGMP) production of a monoclonal antibody anticipated to be used in an upcoming phase 3 clinical trial of Iomab-B. Total cost of the agreement is \$3.3 million. The Company paid a non-refundable payment of \$562,790 upon execution of the agreement. Periodic payments will be made upon reaching certain milestones. As of December 31, 2014, the remaining cost of the agreement is approximately \$2.2 million. Goodwin bills the Company when services are rendered and the Company records the related expense to research and development costs.
- k. On June 20, 2014, the Company entered into a CRO agreement with Act Oncology. Act Oncology provides project management services for the study of Iomab-B used for the intended Phase 3 clinical trial. The total project is estimated to cost approximately \$0.8 million. During 2014, the Company recorded expenses of approximately \$0.7 million. Act Oncology bills the Company when services are rendered and the Company records the related expense to research and development costs.
- l. On September 30, 2014, the Company entered into a research agreement with the Albert Einstein College of Medicine of Yeshiva University (“Einstein”). According to the agreement, Einstein will use certain materials provided by the Company to complete a research project. The research project will explore the feasibility of using Actinium 225 to prepare patients with blood borne cancers to receive a hematopoietic stem cell transplant. Einstein will periodically provide the Company with reports showing project data or research. The total fixed price of the project is \$183,391 which is payable to Einstein in three payments. During the fourth quarter of 2014, we paid approximately \$92,000 to Einstein.

### Intellectual Property Portfolio

We have developed or in-licensed numerous patents and patent applications and possess substantial know-how and trade secrets relating to the development and commercialization of our products. As of March 16, 2015, our patent portfolio includes: 39 issued and pending patents, of which 7 are issued in the United States, 30 are issued or pending internationally, and 2 are pending in the United States. Many of the patents are in-licensed from third parties and some are held by us. These patents cover key areas of our business, including use of the actinium-225 and other alpha emitting isotopes attached to cancer specific carriers like monoclonal antibodies, methods for manufacturing key components of our product candidates including actinium-225 alpha emitting radioisotope and carrier antibodies, and methods for manufacturing finished product candidates for use in cancer treatment. The table below classifies these patents by related family:

Area	Description	US Expiration	US Status	Owner/Licensor
Platform technology	Metastases larger than 1 mm	2019	Issued	MSKCC
Platform technology	Antibody conjugates with DOTA chelators; methods of treating cancer using the same	2021	Issued	MSKCC
Drug preparation methods	Actinium 225 labeling method (binding to an antibody)	2030	Pending	Owned
Drug preparation methods	Bismuth 213 labeling method (binding to an antibody)	2019	Issued	MSKCC
Isotope production methods	Actinium 225 manufacturing in a cyclotron	2026/2027	Issued	Owned
Monoclonal antibody composition and production	Manufacturing of leukemia targeting antibody	2014	Issued	Abbvie

There are no patents covering Iomab<sup>TM</sup>-B; however, we have developed a proprietary strategy based on trade secret protection and the potential for orphan drug and data exclusivities. The BC8 antibody, cell line and related know-how has been exclusively licensed by us from the Fred Hutchinson Cancer Research Center (FHRC) in exchange for milestones, royalties and research support.

Patents related to the antibody component of Actimab-A have been exclusively licensed by us from AbbVie Biotherapeutics Corp. (formerly Abbott Biotherapeutics Corp.) for use with alpha-emitting radioisotopes in exchange for future development and commercialization milestones, a royalty on net sales for a period of 12.5 years from first commercial sale, a negotiation right to be our clinical and/or commercial antibody supplier, a negotiation right to co-promote Actimab<sup>TM</sup>-A in the United States on terms to be negotiated, and the grant-back of IP rights covering improvements to the antibody for use other than with an alpha-emitting isotope. Patents covering actinium-225 conjugated to antibodies have been exclusively licensed by us from MSKCC in exchange for license fees, research support payments, development milestones, 2% royalties on net sales for the term of the licensed patents or, if later, 10 years from first commercial sale, and 15% of any sublicense income we may receive. As of December 31, 2014, we owe MSKCC approximately \$0.2 million in past fees and research support payments. We source actinium-225 under an agreement with the Oak Ridge National Laboratory (ORNL) that expires at the end 2015. We believe, but cannot guarantee, that we will be able to renew this contract for additional annual periods.

## Key Strengths

We believe that the key elements for our market success include:

- **Clinical results to date imply lower development risk for its lead drug candidates:** Our lead drug candidates have been tested in over 300 patients and demonstrated favorable safety and efficacy profiles. Iomab™-B has been administered to more than 250 patients in a number of Phase 1 and Phase 2 trials and has shown a clear survival benefit in the indication for which it is being developed. Bismab®-A and Actimab™-A, drugs based on the APIT platform have to date been tested in over 60 patients in 3 clinical trials. In each trial they exhibited few side effects and have shown indications of efficacy. The current proof-of-concept Actimab™-A Phase 1/2 clinical trial is directed at a patient population that is generally easier to treat (newly diagnosed vs. relapsed/refractory in previous trials), and employs a more potent treatment regimen (low dose chemotherapy plus two doses of Actimab™-A plus low dose chemotherapy vs. a single dose of Actimab™-A in the physician sponsored trial).
- **Additional product opportunities from the APIT platform:** Our APIT technology has the potential for broad applicability for the treatment of many cancer types, which allows us to add new product candidates to its pipeline based on well-defined patent protected methods.
- **Collaboration with MSKCC:** Our collaboration with MSKCC includes licensing, research and clinical trial arrangements involving MSKCC labs and clinicians and included financial support with respect to certain pre-2012 R&D-related expenses.
- **Scientific backing of leading experts:** Our clinical advisory board and collaborators include some of the most recognized clinicians and scientists working at some of the highest regarded medical institutions in the United States and the world, including MSKCC, Johns Hopkins University, University of Pennsylvania, FHCC and MD Anderson Cancer Center. This is expected to be beneficial to us both in clinical development and market acceptance assuming its drug candidates are approved.
- **Isotope supply secured for clinical trials:** We have a contractual relationship with ORNL of the DOE that provides us access to the largest known supply reserves of actinium 225. Iodine 131 is readily available from a number of qualified pharmaceutical supply vendors.
- **Proprietary alpha emitting isotope manufacturing technology fully developed:** We have developed our own proprietary technology for commercial scale manufacturing of actinium 225. This is expected to ensure commercial supply of Ac-225 for Actimab™-A, Actimab™-B and other actinium-linked products should they be approved.
- **cGMP Actimab™-A manufacturing developed:** We have developed at a contractor's site full cGMP (current good manufacturing practices) manufacturing processes for our drug candidate Actimab™-A.
- **Substantial IP portfolio:** We have an intellectual property portfolio in excess of 60 patents and patent applications, both in the United States and other countries, which cover clinical applications of the APIT technology and methods of manufacturing actinium 225 thus giving us control over both the applications of our technology and a supply chain of our key ingredients, actinium 225 and bismuth 213 alpha emitting isotopes.

## Competition Overview

To our knowledge, there are no other commercial entities that have significant programs in place for developing Ac-225- or Bi-213-based drugs. In the wider field of medical oncology, we face competition from: developers of other alpha emitter based drug candidates, other radioimmunotherapy based technologies, technologies for labeling antibodies with toxic drugs (antibody-drug conjugates), and for each disease indication from all drugs available and/or in development.

For our lead indication, acute myeloid leukemia, there are a number of companies developing drugs for AML. These drugs are most often small molecules and as such have different safety profiles and mechanisms of action compared to our drug candidates. Acute myeloid leukemia in older patients remains an area of high medical need that could accommodate many new products with favorable safety and efficiency profiles.

In the field of hematopoietic stem cell transplantation, pharmaceuticals currently used for bone marrow ablation/conditioning are generic drugs and to our knowledge there are no significant industry efforts to enter this area, especially in older patients.

## Government Regulation

Governmental authorities in the United States and other countries extensively regulate, among other things, the research, development, testing, manufacture, labeling, promotion, advertising, distribution and marketing of radioimmunotherapy pharmaceutical products such as those being developed by us. In the United States, the FDA regulates such products under the Federal Food, Drug and Cosmetic Act (FDCA) and implements regulations. Failure to comply with applicable FDA requirements, both before and after approval, may subject us to administrative and judicial sanctions, such as a delay in approving or refusal by the FDA to approve pending applications, warning letters, product recalls, product seizures, total or partial suspension of production or distribution, injunctions and/or criminal prosecution.

### ***U.S. Food and Drug Administration Regulation***

Our research, development and clinical programs, as well as our manufacturing and marketing operations, are subject to extensive regulation in the United States and other countries. Most notably, all of our products sold in the United States are subject to the FDA as implemented and enforced by the FDA. Certain of our product candidates in the United States require FDA pre-marketing approval of a BLA pursuant to 21 C.F.R. § 314. Foreign countries may require similar or more onerous approvals to manufacture or market these products.

Failure by us or by our suppliers to comply with applicable regulatory requirements can result in enforcement action by the FDA, the Nuclear Regulatory Commission or other regulatory authorities, which may result in sanctions, including but not limited to, untitled letters, warning letters, fines, injunctions, consent decrees and civil penalties; customer notifications or repair, replacement, refunds, recall, detention or seizure of our products; operating restrictions or partial suspension or total shutdown of production; refusing or delaying our requests for BLA premarket approval of new products or modified products; withdrawing BLA approvals that have already been granted; and refusal to grant export.

### **Employees**

As of March 16, 2015, we have 12 full-time employees. None of these employees are covered by a collective bargaining agreement, and we believe our relationship with our employees is good. We also engage consultants on an as-needed basis to supplement existing staff.

## **ITEM 1A. RISK FACTORS.**

*In analyzing our company, you should consider carefully the following risk factors, together with all of the other information included in this Annual Report on Form 10-K. Factors that could cause or contribute to differences in our actual results include those discussed in the following subsection, as well as those discussed in "Management's Discussion and Analysis of Financial Condition and Results of Operations" and elsewhere throughout this Annual Report on Form 10-K. Each of the following risk factors, either alone or taken together, could adversely affect our business, operating results and financial condition, as well as adversely affect the value of an investment in our company. The risks and uncertainties described below are not the only ones we face. Additional risks not currently known to us or other factors not perceived by us to present significant risks to our business at this time also may impair our business operations.*

### **Risks Related to Our Business**

***We have generated no revenue from commercial sales to date and our future profitability is uncertain.***

We have a limited operating history and our business is subject to all of the risks inherent in the establishment of a new business enterprise. Our likelihood of success must be considered in light of the problems, expenses, difficulties, complications and delays frequently encountered in connection with this development and expansion. Since we began our business, we have focused on research, development and clinical trials of product candidates, and have incurred losses since inception. As of December 31, 2014, we had an accumulated deficit of approximately \$91.2 million. If we continue to incur operating losses and fail to become a profitable company, we may be unable to continue our operations. We expect to continue to operate at a net loss as we continue our research and development efforts, continue to conduct clinical trials and develop manufacturing, sales, marketing and distribution capabilities. There can be no assurance that the products under development by us will be approved for sale in the United States or elsewhere. Furthermore, there can be no assurance that if such products are approved they will be successfully commercialized, and the extent of our future losses and the timing of our profitability are highly uncertain.

***If we fail to obtain the capital necessary to fund our operations, we will be unable to continue or complete our product development and you will likely lose your entire investment.***

We do not currently have sufficient capital for the development and commercialization of our lead product candidate and we will need to continue to seek capital from time to time to continue development of our lead product candidates and to acquire and develop other product candidates. Our first product candidate is not expected to be commercialized, if approved, until at least 2017 and we do not expect that the partnering revenues it will generate will be sufficient to fund our ongoing operations. Our cash balance as of December 31, 2014 was approximately \$6.7 million. In February 2015, we raised total net proceeds of approximately \$18.5 million from the completion of an underwritten public offering of common stock and warrants. We expect that we will need approximately \$9.6 million over the next 12 months to finance research and development and to cover our ongoing working capital needs.

Our business or operations may change in a manner that would consume available funds more rapidly than anticipated and substantial additional funding may be required to maintain operations, fund expansion, develop new or enhanced products, acquire complementary products, business or technologies or otherwise respond to competitive pressures and opportunities, such as a change in the regulatory environment or a change in preferred cancer treatment modalities. However, we may not be able to secure funding when we need it or on favorable terms.

To raise additional capital, we may in the future offer additional shares of our common stock or other securities convertible into or exchangeable for our common stock. We cannot assure you that we will be able to sell shares or other securities in any other offering at a price per share that is equal to or greater than the price per share paid by investors in this offering, and investors purchasing shares or other securities in the future could have rights superior to existing stockholders. The price per share at which we sell additional shares of our common stock or other securities convertible into or exchangeable for our common stock in future transactions may be higher or lower than the price per share in this offering. Additionally, you may incur dilution as a result of grants of equity awards under our equity incentive plans, or upon exercise of options or warrants currently outstanding with exercise prices at or below the public offering price of our common stock in this offering. See the section entitled “Dilution” below for a more detailed discussion of the dilution you will incur if you purchase common stock and accompanying warrants in this offering.

If we cannot raise adequate funds to satisfy our capital requirements, we will have to delay, scale-back or eliminate our research and development activities, clinical studies or future operations. We may also be required to obtain funds through arrangements with collaborators, which arrangements may require us to relinquish rights to certain technologies or products that we otherwise would not consider relinquishing, including rights to future product candidates or certain major geographic markets. We may further have to license our technology to others. This could result in sharing revenues which we might otherwise have retained for ourselves. Any of these actions may harm our business, financial condition and results of operations.

The amount of capital we may need depends on many factors, including the progress, timing and scope of our product development programs; the progress, timing and scope of our preclinical studies and clinical trials; the time and cost necessary to obtain regulatory approvals; the time and cost necessary to further develop manufacturing processes and arrange for contract manufacturing; our ability to enter into and maintain collaborative, licensing and other commercial relationships; and our partners’ commitment of time and resources to the development and commercialization of our products.

***We have limited access to the capital markets and even if we can raise additional funding, we may be required to do so on terms that are dilutive to you.***

We have limited access to the capital markets to raise capital. The capital markets have been unpredictable in the recent past for radio-immunotherapy and other oncology companies and unprofitable companies such as ours. In addition, it is generally difficult for development stage companies to raise capital under current market conditions. The amount of capital that a company such as ours is able to raise often depends on variables that are beyond our control. As a result, we may not be able to secure financing on terms attractive to us, or at all. If we are able to consummate a financing arrangement, the amount raised may not be sufficient to meet our future needs. If adequate funds are not available on acceptable terms, or at all, our business, including our technology licenses, results of operations, financial condition and our continued viability will be materially adversely affected.

***If we fail to obtain or maintain necessary FDA approval for our radio-immunotherapy products, or if such approvals are delayed, we will be unable to commercially distribute and market our products.***

Our products are subject to rigorous regulation by the FDA and numerous other federal, state and foreign governmental authorities. The process of seeking regulatory approval to market a radio-immunotherapy product is expensive and time-consuming and, notwithstanding the effort and expense incurred, approval is never guaranteed. If we are not successful in obtaining timely approval of Company products from the FDA, we may never be able to generate significant revenue and may be forced to cease operations. In particular, the FDA permits commercial distribution of a new radio-immunotherapy product only after a Biologics License Application (BLA) for the product has received FDA approval. The BLA process is costly, lengthy and inherently uncertain. Any BLA filed by us will have to be supported by extensive data, including, but not limited to, technical, preclinical, clinical trial, manufacturing and labeling data, to demonstrate to the FDA's satisfaction the safety and efficacy of the product for its intended use. The lengthy approval process as well as the unpredictability of future clinical trial results may result in our failing to obtain regulatory approval to market our product candidates, which would significantly harm our business, results of operations and prospects. In addition, even if we were to obtain approval, regulatory authorities may approve any of our product candidates for fewer or more limited indications than we request, may not approve the price we intend to charge for our products, may grant approval contingent on the performance of costly post-marketing clinical trials, or may approve a product candidate with a label that does not include the labeling claims necessary or desirable for the successful commercialization of that product candidate. Any of the foregoing scenarios could materially harm the commercial prospects for our product candidates.

The approval process in the United States and in other countries could result in unexpected and significant costs for us and consume management's time and other resources. The FDA and other foreign regulatory agencies could ask us to supplement our submissions, collect non-clinical data, conduct additional clinical trials or engage in other time-consuming actions, or it could simply deny our applications. In addition, even if we obtain approval to market our products in the United States or in other countries, the approval could be revoked or other restrictions imposed if post-market data demonstrates safety issues or lack of effectiveness. We cannot predict with certainty how, or when, the FDA or other regulatory authorities will act. If we are unable to obtain the necessary regulatory approvals, our financial condition and cash flow may be materially adversely affected, and our ability to grow domestically and internationally may be limited. Additionally, even if we obtain approval, regulatory authorities may approve any of our product candidates for fewer or more limited indications than we request. The Company's products may not be approved for the specific indications that are most necessary or desirable for successful commercialization or profitability.

***Our radio-immunotherapy product candidates are in the early stages of development; and we have not demonstrated that any of our products are safe and effective for any indication.***

We currently have only two products in clinical development. We have commenced a Phase 1/2 multi-center AML trial with fractionated doses of Actimab™-A under its own federal Investigational New Drug Application (IND). Additionally, there are a number of physician IND trials at the FHCRC that have been conducted or are currently ongoing at FHCRC with single doses of Iomab™-B. We plan to file our own IND prior to initiating our planned Phase 3 study of Iomab™-B.

We cannot predict whether we will encounter problems with any of our ongoing or planned clinical trials that will cause us or regulatory authorities to delay, suspend, or discontinue clinical trials or to delay the analysis of data from ongoing clinical trials. Any of the following could delay or disrupt the clinical development of our product candidates and potentially cause our product candidates to fail to receive regulatory approval:

- conditions imposed on us by the FDA or comparable foreign authorities regarding the scope or design of our clinical trials;
- delays in receiving, or the inability to obtain, required approvals from institutional review boards (IRBs) or other reviewing entities at clinical sites selected for participation in our clinical trials;
- delays in enrolling patients into clinical trials;
- a lower than anticipated retention rate of patients in clinical trials;
- the need to repeat or discontinue clinical trials as a result of inconclusive or negative results or unforeseen complications in testing or because the results of later trials may not confirm positive results from earlier preclinical studies or clinical trials;
- inadequate supply, delays in distribution deficient quality of, or inability to purchase or manufacture drug product, comparator drugs or other materials necessary to conduct our clinical trials;

- unfavorable FDA or other foreign regulatory inspection and review of a clinical trial site or records of any clinical or preclinical investigation;
- serious and unexpected drug-related side effects experienced by participants in our clinical trials, which may occur even if they were not observed in earlier trials or only observed in a limited number of participants;
- a finding that the trial participants are being exposed to unacceptable health risks;
- the placement by the FDA or a foreign regulatory authority of a clinical hold on a trial; or
- delays in obtaining regulatory agency authorization for the conduct of our clinical trials.

We may suspend, or the FDA or other applicable regulatory authorities may require us to suspend, clinical trials of a product candidate at any time if we or they believe the patients participating in such clinical trials, or in independent third party clinical trials for drugs based on similar technologies, are being exposed to unacceptable health risks or for other reasons.

Further, individuals involved with our clinical trials may serve as consultants to us from time to time and receive stock options or cash compensation in connection with such services. If these relationships and any related compensation to the clinical investigator carrying out the study result in perceived or actual conflicts of interest, or the FDA concludes that the financial relationship may have affected interpretation of the study, the integrity of the data generated at the applicable clinical trial site may be questioned and the utility of the clinical trial itself may be jeopardized. The delay, suspension or discontinuation of any of our clinical trials, or a delay in the analysis of clinical data for our product candidates, for any of the foregoing reasons, could adversely affect our efforts to obtain regulatory approval for and to commercialize our product candidates, increase our operating expenses and have a material adverse effect on our financial results.

Clinical trials may also be delayed or terminated as a result of ambiguous or negative interim results. In addition, a clinical trial may be suspended or terminated by us, the FDA, the IRBs at the sites where the IRBs are overseeing a trial, or a data safety monitoring board, or DSMB, overseeing the clinical trial at issue, or other regulatory authorities due to a number of factors, including:

- failure to conduct the clinical trial in accordance with regulatory requirements or our clinical protocols;
- inspection of the clinical trial operations or trial sites by the FDA or other regulatory authorities resulting in the imposition of a clinical hold;
- varying interpretation of data by the FDA or similar foreign regulatory authorities;
- failure to achieve primary or secondary endpoints or other failure to demonstrate efficacy;
- unforeseen safety issues; or
- lack of adequate funding to continue the clinical trial.

Additionally, changes in regulatory requirements and guidance may occur and we may need to amend clinical trial protocols to reflect these changes. Amendments may require us to resubmit our clinical trial protocols to IRBs for reexamination, which may impact the cost, timing or successful completion of a clinical trial.

In addition, neither we nor any relevant collaborative partner(s) has yet undertaken any clinical assessment or investigation of Company radio-immunotherapy product candidates for other indications, including colon cancer or prostate cancer. Significant further investment may be required to acquire antibody rights and to undertake necessary research and continued development. Further laboratory and specific clinical testing will be required prior to regulatory approval of any product candidates. Adverse or inconclusive results from pre-clinical testing or clinical trials of product candidates may substantially delay, or halt entirely, any further development of one or more of our products. The projected timetables for continued development of the technologies and related product candidates by us may otherwise be subject to delay or suspension.

***Modifications to our product candidates may require federal approvals.***

The BLA application is the vehicle through which the company may formally propose that the FDA approve a new pharmaceutical for sale and marketing in the United States. Once a particular product candidate receives FDA approval, expanded uses or uses in new indications of our products may require additional human clinical trials and new regulatory approvals, including additional IND and BLA submissions and premarket approvals before we can begin clinical development, and/or prior to marketing and sales. If the FDA requires new approvals for a particular use or indication, we may be required to conduct additional clinical studies, which would require additional expenditures and harm our operating results. If the products are already being used for these new indications, we may also be subject to significant enforcement actions.

Conducting clinical trials and obtaining approvals can be a time-consuming process, and delays in obtaining required future approvals could adversely affect our ability to introduce new or enhanced products in a timely manner, which in turn would harm our future growth.

***There is no guarantee that the FDA will approve BLAs for our product candidates and failure to obtain necessary approvals for our product candidates would adversely affect our ability to grow our business.***

We have recently commenced a multi-center Phase 1/2 clinical trial for our lead product candidate, Actimab™-A, in AML and in the future expect to submit a BLA to the FDA for approval of this product. This product candidate is also the subject of an ongoing human safety trial being conducted under a physician IND at MSKCC. We are in the early stages of evaluating other product candidates consisting of conjugates of Ac-225 with human or humanized antibodies for pre-clinical and clinical development in other types of cancer. In June 2012, we acquired rights to Iomab™, a Phase 2 clinical stage monoclonal antibody with safety and efficacy data in more than 250 patients in need of HSCT. Product candidates utilizing this antibody would also require BLA approval before they can be marketed in the United States. The FDA may not approve these products for the indications that are necessary or desirable for successful commercialization. Indeed, the FDA may fail to approve any BLA we submit for new product candidates or for new intended uses or indications for approved products or future product candidates. Failure to obtain FDA approval for our products in the proposed indications would have an adverse effect on our ability to expand our business.

***Clinical trials necessary to support approval of BLAs for our product candidates will be time consuming and expensive. Delays or failures in our clinical trials may prevent us from commercializing our product candidates and will adversely affect our business, operating results and prospects and could cause us to cease operations.***

Initiating and completing clinical trials necessary to support FDA approval of a BLA for Actimab™-A and other product candidates, is a time-consuming and expensive process, and the outcome is inherently uncertain. Moreover, the results of early clinical trials are not necessarily predictive of future results, and any product candidate we advance into clinical trials may not have favorable results in later clinical trials. We have worked with the FDA to develop a clinical trial designed to test the initial safety and efficacy of Actimab™-A in newly diagnosed AML patients over the age of 60, and on October 6, 2008, and January 5, 2009, we submitted IND amendments to the FDA for the conduct of a multi-center Phase 1/2 clinical trial for treatment of AML. The trial is now underway with the purpose of examining the use of Actimab™-A in AML patients who are not eligible for approved forms of treatment with curative intent. The trial is not designed to support marketing approval for the product candidate, and one or more additional trials will have to be conducted in the future before we file a BLA. In addition, there can be no assurance that the data generated during the trial will meet our chosen safety and effectiveness endpoints or otherwise produce results that will eventually support the filing or approval of a BLA. Even if the data from this trial are favorable, these data may not be predictive of the results of any future clinical trials.

***The issued patents, which are licensed by us for the HuM-195 antibody, our acute myeloid leukemia targeting antibody, may expire before we have commercialized Actimab™-A.***

The humanized antibody which we use in the conjugated Actimab™-A product candidate is covered by the claims of issued patents that we license from Facet Biotech Corporation, a wholly-owned subsidiary of AbbVie Laboratories. After these patents expire, others may be eventually able to use an antibody with the same sequence, and we will then need to rely on additional patent protection covering alpha particle drug products comprising actinium 225. Any competing product based on the HuM-195 antibody is likely to require several years of development before achieving our product candidate's current status and may be subject to significant regulatory hurdles, but is nevertheless a possibility that can affect the Company's business in the future.

Additionally, because we expect that certain of these patents will expire prior to commercialization of Actimab™-A, we expect that in order to attract a commercialization partner for that product candidate, we may need to reach an agreement with AbbVie to reduce the milestone payments and royalties currently required to be paid under our license agreement for HuM-195. There can be no assurance that the parties will be able to agree on an amendment to the terms of the license. Failure to reach such an agreement could materially adversely affect our ability to find a commercialization partner for Actimab™-A which may materially harm our business.

***Iomab™-B is not patent protected.***

Neither the antibody portion nor the composition of matter as a whole for the conjugated Iomab™ product candidate is covered by the claims of any issued or pending patents. Accordingly, there are no patents that would prevent others from using an antibody with the same antibody sequence in any drug product (e.g., those comprising iodine 131 or alpha particle emitters). Any competing product based on the antibody used in Iomab™-B is likely to require several years of development before achieving our product candidate's current status and may be subject to significant regulatory hurdles, but is nevertheless a possibility that could negatively impact the Company's business in the future.

***We may be unable to obtain a sufficient supply of Ac-225 medical grade isotope in order to continue clinical trials and to allow for the manufacture of commercial quantities of Actimab™-A***

There are limited quantities of Ac-225 available today. The existing supplier of Ac-225 to us is the ORNL, which is a science and energy national laboratory in the Department of Energy system. ORNL manufactures Ac-225 by eluting it from its supply of Thorium-229. Although this has proven to be a very reliable source of production for a number of years, it is limited by the quantity of Thorium-229 at ORNL. We believe that the current approximate maximum of Ac-225 production from this source is sufficient for approximately 1,000–2,000 patient treatments per year. Since our needs are significantly below that amount at this time, and will continue to be below that for as long as we do not have a commercial product with a potential of selling more than 2,000 patient doses per year, we believe that this supply will be sufficient for completion of clinical trials and early commercialization. To secure supplies beyond this amount, we have developed what we believe to be a scalable cost-effective process for manufacturing Ac-225 in a cyclotron at an estimated cost in excess of \$5 million. This work has been conducted at Technical University Munich (TUM) in Germany. We are now in possession of detailed descriptions of all the developed manufacturing procedures and have rights to all relevant patent applications and other intellectual property. However, we do not currently have access to a commercial cyclotron capable of producing medical grade Ac-225. Although beam time on such cyclotrons is commercially available, we do not currently have a relationship with any entity that owns or controls a suitable cyclotron. We have identified possible sources and estimate that we could secure the necessary beam time when needed at a cost of approximately \$2 million per year. In the meantime, our contract for supply of this isotope from ORNL must be renewed yearly, and the current contract extends through the end of 2015. While we expect this contract will be renewed at the end of its term, there can be no assurance that ORNL will decide to renew the contract or that the United States Department of Energy will not change its policies that allow for the sale of isotope to us. Failure to acquire sufficient quantities of medical grade Ac-225 would make it impossible to effectively complete clinical trials and to commercialize Actimab™-A and would materially harm our business.

***Conducting successful clinical studies may require the enrollment of large numbers of patients, and suitable patients may be difficult to identify and recruit.***

Patient enrollment in clinical trials and completion of patient participation and follow-up depends on many factors, including the size of the patient population; the nature of the trial protocol; the availability of approved effective treatments for the relevant disease; competition from other clinical trial programs for similar indications; the attractiveness of, or the discomforts and risks associated with, the treatments received by enrolled subjects; the availability of appropriate clinical trial investigators; support staff; and proximity of patients to clinical sites and ability to comply with the eligibility and exclusion criteria for participation in the clinical trial and patient compliance. For example, patients may be discouraged from enrolling in our clinical trials if the trial protocol requires them to undergo extensive post-treatment procedures or follow-up to assess the safety and effectiveness of our product candidates or if they determine that the treatments received under the trial protocols are not attractive or involve unacceptable risks or discomforts. Patients may also not participate in our clinical trials if they choose to participate in contemporaneous clinical trials of competitive product candidates. In addition, patients participating in refractory AML clinical trials are seriously and often terminally ill and therefore may not complete the clinical trial due to reasons including comorbid conditions or occurrence of adverse medical events related or unrelated to the investigational products, or death.

***Development of sufficient and appropriate clinical protocols to demonstrate safety and efficacy are required and we may not adequately develop such protocols to support approval.***

The FDA may require us to submit data on a greater number of patients than we originally anticipated and/or for a longer follow-up period or change the data collection requirements or data analysis applicable to our clinical trials. It may also require additional data on certain categories of patients, should it emerge during the conduct of our clinical trials that certain categories of patients are likely to be affected in different and/or additional manners than the rest of the patient population. In addition to FDA requirements, our clinical trials require the approval of the IRB at each site selected. We have submitted our clinical trial protocol for our current Actimab™-A clinical trial to the IRBs at participating sites for approval and we have thus far obtained approval from seven IRBs. Our clinical trial protocols have not been rejected by any IRB to date.

***FDA may take actions that would prolong, delay, suspend, or terminate clinical trials of our product candidates, which may delay or prevent us from commercializing our product candidates on a timely basis, causing us to incur additional costs and delay our receipt of any revenue from potential product sales.***

There can be no assurance that the data generated in our clinical trials will be acceptable to FDA or that if future modifications during the trial are necessary, that any such modifications will be acceptable to FDA. Certain modifications to a clinical trial protocol made during the course of the clinical trial have to be submitted to the FDA. This could result in the delay or halt of a clinical trial while the modification is evaluated. In addition, depending on the quantity and nature of the changes made, FDA could take the position that some or all of the data generated by the clinical trial is not usable because the same protocol was not used throughout the trial. This might require the enrollment of additional subjects, which could result in the extension of the clinical trial and the FDA delaying approval of a product candidate. If the FDA believes that its prior approval is required for a particular modification, it can delay or halt a clinical trial while it evaluates additional information regarding the change.

Serious injury or death resulting from a failure of one of our product candidates during current or future clinical trials could also result in the FDA delaying our clinical trials or denying or delaying approval of a product candidate.

The Phase 1 portion of the ongoing Phase 1/2 clinical trial for Actimab™-A being conducted at seven clinical centers in the United States (MSKCC, MD Anderson Cancer Center, Fred Hutchinson Cancer Research Center, Johns Hopkins Medicine, University of Pennsylvania Health System, Baylor Summons Cancer Center and Columbia University Medical Center) was designed to establish the maximum tolerated dose of the product. As the Company expected, patients receiving highest dose of the drug administered in the trial so far had prolonged bone marrow suppression which could lead to fatal infections and other severe consequences. Consequently, the dose levels of our drug in that trial were reduced as we continue our work on establishing maximum tolerated dose.

Even though an adverse event may not be the result of our product candidate, the FDA or an IRB could delay or halt a clinical trial for an indefinite period of time while an adverse event is reviewed, and likely would do so in the event of multiple such events.

Any delay or termination of our current or future clinical trials as a result of the risks summarized above, including delays in obtaining or maintaining required approvals from IRBs, delays in patient enrollment, the failure of patients to continue to participate in a clinical trial, and delays or termination of clinical trials as a result of protocol modifications or adverse events during the trials, may cause an increase in costs and delays in the filing of any submissions with the FDA, delay the approval and commercialization of our product candidates or result in the failure of the clinical trial, which could adversely affect our business, operating results and prospects. Lengthy delays in the completion of our Actimab™-A clinical trials would adversely affect our business and prospects and could cause us to cease operations.

***If the third parties on which we rely to conduct our clinical trials and to assist us with pre-clinical development do not perform as contractually required or expected, or fail to comply with applicable regulations and standards, we may not be able to obtain regulatory approval for or commercialize our product candidates.***

We do not have the ability to independently conduct our pre-clinical and clinical trials for our product candidates and we must rely on third parties, such as contract research organizations, medical institutions, clinical investigators and contract laboratories to conduct such trials. Our reliance on these third parties for clinical development activities results in reduced control over these activities. Moreover, the FDA requires us to comply with regulations and standards, commonly referred to as GCPs, for conducting, recording and reporting the results of clinical trials to assure that data and reported results are credible and accurate and that the trial participants are adequately protected. Our reliance on third parties does not relieve us of these responsibilities and requirements. If we or any of our third party contractors fail to comply with applicable GCPs, the clinical data generated in our clinical trials may be deemed unreliable and the FDA or comparable foreign regulatory authorities may require us to perform additional clinical trials before approving our marketing applications. We cannot assure you that upon inspection by a given regulatory authority, such regulatory authority will determine that any of our clinical trials complies with GCP regulations. In addition, our clinical trials must be conducted with product produced under current good manufacturing practice, or cGMP, regulations. Our failure to comply with these regulations may require us to repeat clinical trials, which would delay the regulatory approval process.

To date, we believe our consultants, contract research organizations and other similar entities with which we are working have performed well; however, if these third parties do not successfully carry out their contractual duties, meet expected deadlines, or comply with applicable regulations, we may be required to replace them. Although we believe that there are a number of other third-party contractors we could engage to continue these activities, we may not be able to enter into arrangements with alternative third-party contractors or to do so on commercially reasonable terms, which may result in a delay of our planned clinical trials. Accordingly, we may be delayed in obtaining regulatory approvals for our product candidates and may be delayed in our efforts to successfully develop our product candidates.

In addition, our third-party contractors are not our employees, and except for remedies available to us under our agreements with such third-party contractors, we cannot control whether or not they devote sufficient time and resources to our ongoing clinical, nonclinical and preclinical programs. If these third parties do not successfully carry out their contractual duties or regulatory obligations or meet expected deadlines, if these third parties need to be replaced, or if the quality or accuracy of the data they obtain is compromised due to the failure to adhere to our clinical protocols or regulatory requirements or for other reasons, our pre-clinical development activities or clinical trials may be extended, delayed, suspended or terminated, and we may not be able to obtain regulatory approval for, or successfully commercialize, our product candidates on a timely basis, if at all, and our business, operating results and prospects may be adversely affected. Furthermore, our third-party clinical trial investigators may be delayed in conducting our clinical trials for reasons outside of their control.

***The future results of our current or future clinical trials may not support our product candidate claims or may result in the discovery of unexpected adverse side effects.***

Even if our clinical trials are completed as planned, we cannot be certain that their results will support our product candidate claims or that the FDA or foreign authorities will agree with our conclusions regarding them. Success in pre-clinical studies and early clinical trials does not ensure that later clinical trials will be successful, and we cannot be sure that the later trials will replicate the results of prior trials and pre-clinical studies. The clinical trial process may fail to demonstrate that our product candidates are safe and effective for the proposed indicated uses. If FDA concludes that the clinical trials for Actimab™-A, or any other product candidate for which we might seek approval, have failed to demonstrate safety and effectiveness, we would not receive FDA approval to market that product candidate in the United States for the indications sought. In addition, such an outcome could cause us to abandon the product candidate and might delay development of others. Any delay or termination of our clinical trials will delay or preclude the filing of any submissions with the FDA and, ultimately, our ability to commercialize our product candidates and generate revenues. It is also possible that patients enrolled in clinical trials will experience adverse side effects that are not currently part of a product candidate's profile. In addition, our clinical trials for Actimab™-A involve a relatively small patient population. Because of the small sample size, their results may not be indicative of future results.

***Our product candidates for which we intend to seek approval as biologic products may face competition sooner than anticipated.***

Our product candidates are regulated by the FDA as biologic products and we intend to seek approval for these products pursuant to the BLA pathway. The Biologics Price Competition and Innovation Act of 2009, or BPCIA, created an abbreviated pathway for the approval of biosimilar and interchangeable biologic products. The abbreviated regulatory pathway establishes legal authority for the FDA to review and approve biosimilar biologics, including the possible designation of a biosimilar as "interchangeable" based on its similarity to an existing brand product. Under the BPCIA, an application for a biosimilar product cannot be approved by the FDA until 12 years after the original branded product was approved under a BLA. The law is complex and is still being interpreted and implemented by the FDA. As a result, its ultimate impact, implementation, and meaning are subject to uncertainty. While it is uncertain when such processes intended to implement BPCIA may be fully adopted by the FDA, any such processes could have a material adverse effect on the future commercial prospects for our biologic products.

***Actimab™-A and future product candidates may never achieve market acceptance.***

Actimab™-A and future product candidates that we may develop may never gain market acceptance among physicians, patients and the medical community. The degree of market acceptance of any of product will depend on a number of factors, including the actual and perceived effectiveness and reliability of the product; the results of any long-term clinical trials relating to use of the product; the availability, relative cost and perceived advantages and disadvantages of alternative technologies; the degree to which treatments using the product are approved for reimbursement by public and private insurers; the strength of our marketing and distribution infrastructure; and the level of education and awareness among physicians and hospitals concerning the product.

Failure of Actimab™-A or any of our other product candidates to significantly penetrate current or new markets would negatively impact our business financial condition and results of operations.

***To be commercially successful, physicians must be persuaded that using our product candidates for treatment of AML and other cancers, if approved for those indications, are effective alternatives to existing therapies and treatments.***

We believe that oncologists and other physicians will not widely adopt a product candidate unless they determine, based on experience, clinical data, and published peer-reviewed journal articles, that the use of that product candidate provides an effective alternative to other means of treating specific cancers. Patient studies or clinical experience may indicate that treatment with our product candidates does not provide patients with sufficient benefits in extension of life or quality of life. We believe that recommendations and support for the use of each product candidate from influential physicians will be essential for widespread market acceptance. Our product candidates are still in the development stage and it is premature to attempt to gain support from physicians at this time. We can provide no assurance that such support will ever be obtained. If our product candidates do not receive such support from these physicians and from long-term data, physicians may not use or continue to use, and hospitals may not purchase or continue to purchase, them.

***Both before and after marketing approval, our product candidates are subject to ongoing regulatory requirements and continued regulatory review, and if we fail to comply with these continuing regulatory requirements, we could be subject to a variety of sanctions and the sale of any approved products could be suspended.***

Both before and after regulatory approval to market a particular product candidate, the manufacturing, labeling, packaging, adverse event reporting, storage, advertising, promotion, distribution and record keeping related to the product are subject to extensive, ongoing regulatory requirements enforced by FDA and other similar regulatory bodies. Additionally, because our product candidates include radio-active isotopes, they will be subject to additional regulation and oversight from the United States Nuclear Regulatory Commission (NRC) and similar bodies in other jurisdictions. The FDA regulatory requirements include submissions of safety and other post-marketing information and reports, registration, as well as continued compliance with cGMP requirements and GCP requirements for any clinical trials that we conduct post-approval. Any regulatory approvals that we receive for our product candidates may also be subject to limitations on the approved indicated uses for which the product may be marketed or to the conditions of approval, or contain requirements for potentially costly post-marketing testing, including Phase IV clinical trials, and surveillance to monitor the safety and efficacy of the product candidate. Later discovery of previously unknown problems with a product, including adverse events of unanticipated severity or frequency, or with our third-party manufacturers or manufacturing processes, or failure to comply with the regulatory requirements of the FDA and other applicable U.S. and foreign regulatory authorities could subject us to administrative or judicially imposed sanctions, including:

- restrictions on the marketing of our products or their manufacturing processes;
- warning letters;
- civil or criminal penalties;
- fines;
- injunctions;
- product seizures or detentions;
- import or export bans;
- voluntary or mandatory product recalls and related publicity requirements;
- suspension or withdrawal of regulatory approvals;
- total or partial suspension of production; and
- refusal to approve pending applications for marketing approval of new products or supplements to approved applications.

The FDA's policies may change and additional government regulations may be enacted that could prevent, limit or delay regulatory approval of our product candidates. If we are slow or unable to adapt to changes in existing requirements or the adoption of new requirements or policies, or if we are not able to maintain regulatory compliance, we may lose any marketing approval that we may have obtained, which would adversely affect our business, prospects and ability to achieve or sustain profitability.

Even if regulatory approval of a product candidate is granted, such approval may be subject to limitations on the intended uses for which a product may be marketed and reduce the potential to successfully commercialize that product and generate revenue from that product. If the FDA determines that the product promotional materials, labeling, training or other marketing or educational activities constitute promotion of an unapproved use, it could request that we or our commercialization partners cease or modify our training or promotional materials or subject us to regulatory enforcement actions. It is also possible that other federal, state or foreign enforcement authorities might take action if they consider such training or other promotional materials to constitute promotion of an unapproved use, which could result in significant fines or penalties under other statutory authorities, such as laws prohibiting false claims for reimbursement.

***Our revenue stream will depend upon third party coverage and reimbursement of our product candidates, if approved.***

The commercial success of our product candidates in both domestic and international markets will be substantially dependent on whether third-party coverage and reimbursement is available for patients that use our products. However, the availability of insurance coverage and reimbursement for newly approved cancer therapies is uncertain, and therefore, third-party coverage may be particularly difficult to obtain even if our products are approved by the FDA as safe and efficacious. Patients using existing approved therapies are generally reimbursed all or part of the product cost by Medicare or other third-party payors. Medicare, Medicaid, health maintenance organizations and other third-party payors are increasingly attempting to contain healthcare costs by limiting both coverage and the level of reimbursement of new drugs, and, as a result, they may not cover or provide adequate payment for these products. Submission of applications for reimbursement approval generally does not occur prior to the filing of a BLA for that product and may not be granted until many months after BLA approval. In order to obtain coverage and reimbursement for these products, we or our commercialization partners may have to agree to a net sales price lower than the net sales price we might charge in other sales channels. The continuing efforts of government and third-party payors to contain or reduce the costs of healthcare may limit our revenue. Initial dependence on the commercial success of our products may make our revenues particularly susceptible to any cost containment or reduction efforts.

***We have no manufacturing capacity and depend on third-party manufacturers to produce our pre-clinical and clinical trial drug supplies.***

We do not currently operate manufacturing facilities for pre-clinical or clinical production of any of our product candidates. We lack experience in drug manufacturing, and we lack the resources and the capabilities to manufacture any of our product candidates on a clinical or commercial scale. As a result, we rely on a third-party manufacturer to supply, store, and distribute pre-clinical and clinical supply of our product candidates, and plan to continue to do so for the foreseeable future. Any performance failure on the part of our existing or future manufacturers could delay clinical development or regulatory approval of our product candidates or commercialization of any approved products, producing additional losses and depriving us of potential product revenue.

Our product candidates require precise, high quality manufacturing. Failure by our contract manufacturer to achieve and maintain high manufacturing standards could result in patient injury or death, product recalls or withdrawals, delays or failures in testing or delivery, cost overruns, or other problems that could seriously hurt our business. Contract manufacturers may encounter difficulties involving production yields, quality control, and quality assurance. These manufacturers are subject to ongoing periodic and unannounced inspections by the FDA and corresponding state and foreign agencies to ensure strict compliance with cGMPs and other applicable government regulations and corresponding foreign standards; however, we do not have control over third-party manufacturers' compliance with these regulations and standards.

If a contract manufacturer cannot perform as agreed, we may be required to replace it. We may incur added costs and delays in identifying and qualifying replacements because the FDA must approve any replacement manufacturer prior to manufacturing our product candidates. Such approval would require new testing and compliance inspections. In addition, a new manufacturer would have to be educated in, or develop substantially equivalent processes for, production of our product candidates after receipt of FDA approval.

*We anticipate continued reliance on third parties for manufacturing and marketing, if we are successful in obtaining marketing approval from the FDA and other regulatory agencies for any of our product candidates. If we are not able to secure favorable arrangements with such third parties, our business and financial condition would be harmed, and our commercialization of any of our product candidates may be halted, delayed or made less profitable if those third parties fail to obtain such approvals, fail to provide us with sufficient quantities of product or fail to do so at acceptable quality levels or prices.*

To date, our product candidates have been manufactured in small quantities for preclinical and clinical testing by third-party manufacturers. If the FDA or other regulatory agencies approve any of our product candidates for commercial sale, we expect that we would continue to rely, at least initially, on third-party specialized manufacturers to produce commercial quantities of approved products. These manufacturers may not be able to successfully increase the manufacturing capacity for any approved product in a timely or economic manner, or at all. Significant scale-up of manufacturing may require additional validation studies, which the FDA must review and approve. If third party manufacturers are unable to successfully increase the manufacturing capacity for a product candidate, or we are unable to establish our own manufacturing capabilities, the commercial launch of any approved products may be delayed or there may be a shortage in supply, which in turn could have a material adverse effect on our business.

In addition, the facilities used by our contract manufacturers to manufacture our product candidates must be approved by the FDA pursuant to inspections that will be conducted after we submit a BLA to the FDA. We do not control the manufacturing process of, and are completely dependent on, our contract manufacturing partners for compliance with cGMPs. If our contract manufacturers cannot successfully manufacture material that conforms to our specifications and the strict regulatory requirements of the FDA or other regulatory authorities, they will not be able to secure and/or maintain regulatory approval for their manufacturing facilities. If the FDA or a comparable foreign regulatory authority does not approve these facilities for the manufacture of our product candidates or if it withdraws any such approval in the future, we may need to find alternative manufacturing facilities, which would significantly impact our ability to develop, obtain regulatory approval for or market our product candidates, if approved.

We also intend to partner with larger pharmaceutical companies for the commercialization of any of our product candidates that are approved. In connection with our efforts to commercialize our product candidates, we will seek to secure favorable arrangements with third parties to distribute, promote, market and sell them. If we are not able to secure favorable commercial terms or arrangements with third parties for distribution, marketing, promotion and sales of our product candidates, we may have to retain promotional and marketing rights and seek to develop the commercial resources necessary to promote or co-promote or co-market certain or all of our product candidates to the appropriate channels of distribution in order to reach the specific medical market that we are targeting. We may not be able to enter into any partnering arrangements on this or any other basis. If we are not able to secure favorable partnering arrangements, or are unable to develop the appropriate resources necessary for the commercialization of our product candidates, our business and financial condition could be harmed. In addition, we will have to hire additional employees or consultants, since our current employees have limited experience in these areas. Sufficient employees with relevant skills may not be available to us. Any increase in the number of our employees would increase our expense level, and could have an adverse effect on our financial position.

In addition, we, or our potential commercial partners, may not successfully introduce our product candidates or they may not achieve acceptance by patients, health care providers and insurance companies. Further, it is possible that we may not be able to secure arrangements to manufacture, market, distribute, promote and sell our product candidates at favorable commercial terms that would permit us to make a profit. To the extent that corporate partners conduct clinical trials, we may not be able to control the design and conduct of these clinical trials.

***We may have conflicts with our partners that could delay or prevent the development or commercialization of our product candidates.***

We may have conflicts with our partners, such as conflicts concerning the interpretation of preclinical or clinical data, the achievement of milestones, the interpretation of contractual obligations, payments for services, development obligations or the ownership of intellectual property developed during our collaboration. If any conflicts arise with any of our partners, such partner may act in a manner that is adverse to our best interests. Any such disagreement could result in one or more of the following, each of which could delay or prevent the development or commercialization of our product candidates, and in turn prevent us from generating revenues: unwillingness on the part of a partner to pay us milestone payments or royalties we believe are due under a collaboration; uncertainty regarding ownership of intellectual property rights arising from our collaborative activities, which could prevent us from entering into additional collaborations; unwillingness by the partner to cooperate in the development or manufacture of the product, including providing us with product data or materials; unwillingness on the part of a partner to keep us informed regarding the progress of its development and commercialization activities or to permit public disclosure of the results of those activities; initiating litigation or alternative dispute resolution options by either party to resolve the dispute; or attempts by either party to terminate the agreement.

***Upon commercialization of our product candidates, we may be dependent on third parties to market, distribute and sell them.***

Our ability to generate revenues may be dependent upon the sales and marketing efforts of any future co-marketing partners and third-party distributors. At this time, we have not entered into an agreement with any commercialization partner and only plan to do so after the successful completion of Phase 2 clinical trials and prior to commercialization. If we fail to reach an agreement with any commercialization partner, or if upon reaching such an agreement that partner fails to sell a large volume of our products, it may have a negative impact on our business, financial condition and results of operations.

***Our product candidates will face significant competition in the markets for them, and if they are unable to compete successfully, our business will suffer.***

Our product candidates face, and will continue to face, intense competition from large pharmaceutical companies, as well as academic and research institutions. We compete in an industry that is characterized by (i) rapid technological change, (ii) evolving industry standards, (iii) emerging competition and (iv) new product introductions. Our competitors have existing products and technologies that will compete with our product candidates and technologies and may develop and commercialize additional products and technologies that will compete with our product candidates and technologies. Because several competing companies and institutions have greater financial resources than us, they may be able to (i) provide broader services and product lines, (ii) make greater investments in research and development, or R&D, and (iii) carry on broader R&D initiatives. Our competitors also have greater development capabilities than we do and have substantially greater experience in undertaking preclinical and clinical testing of product candidates, obtaining regulatory approvals, and manufacturing and marketing pharmaceutical products. They also have greater name recognition and better access to customers than us. Our chief competitors include companies such as Bayer AG, GlaxoSmithKline Plc and Spectrum Pharmaceuticals, Inc. and others.

***If side effects are identified during the time our product candidates are in development or after they are approved and on the market, we may choose to or be required to perform lengthy additional clinical trials, discontinue development of the affected product candidate, change the labeling of any such products, or withdraw or recall any such products from the market, any of which would hinder or preclude our ability to generate revenues.***

Undesirable side effects caused by our product candidates could cause us or regulatory authorities to interrupt, delay or halt clinical trials and could result in a more restrictive label or the delay or denial of regulatory approval by the FDA or other comparable foreign authorities. The drug-related side effects could affect patient recruitment or the ability of enrolled patients to complete the trial or result in potential product liability claims. Any of these occurrences may harm our business, financial condition and prospects significantly. Even if any of our product candidates receives marketing approval, as greater numbers of patients use a product following its approval, an increase in the incidence of side effects or the incidence of other post-approval problems that were not seen or anticipated during pre-approval clinical trials could result in a number of potentially significant negative consequences, including:

- regulatory authorities may withdraw their approval of the product;
- regulatory authorities may require the addition of labeling statements, such as warnings or contraindications;
- we may be required to change the way the product is administered, conduct additional clinical trials or change the labeling of the product;

- we may elect, or we may be required, to recall or withdraw product from the market;
- we could be sued and held liable for harm caused to patients; and
- our reputation may suffer.

Any of these events could substantially increase the costs and expenses of developing, commercializing and marketing any such product candidates or could harm or prevent sales of any approved products.

***Our business depends upon securing and protecting critical intellectual property.***

Our commercial success will depend in part on our obtaining and maintaining patent, trade secret, copyright and trademark protection of our technologies in the United States and other jurisdictions, as well as successfully enforcing this intellectual property and defending this intellectual property against third-party challenges. We will only be able to protect our technologies from unauthorized use by third parties to the extent that valid and enforceable intellectual property protection, such as patents or trade secrets law, cover them. In particular, we place considerable emphasis on obtaining patent and trade secret protection for significant new technologies, products and processes. Furthermore, the degree of future protection of our proprietary rights is uncertain because legal means afford only limited protection and may not adequately protect our rights or permit us to gain or keep our competitive advantage. Moreover, the degree of future protection of our proprietary rights is uncertain for product candidates that are currently in the early stages of development because we cannot predict which of these product candidates will ultimately reach the commercial market or whether the commercial versions of these product candidates will incorporate proprietary technologies.

***Our patent position is highly uncertain and involves complex legal and factual questions.***

Accordingly, we cannot predict the breadth of claims that may be allowed or enforced under our patents or in third-party patents. For example, we or our licensors might not have been the first to make the inventions covered by each of our pending patent applications and issued patents; we or our licensors might not have been the first to file patent applications for these inventions; others may independently develop similar or alternative technologies or duplicate any of our technologies; it is possible that none of our pending patent applications or the pending patent applications of our licensors will result in issued patents; our issued patents and issued patents of our licensors may not provide a basis for commercially viable technologies, or may not provide us with any competitive advantages, or may be challenged and invalidated by third parties; and, we may not develop additional proprietary technologies that are patentable.

As a result, our owned and licensed patents may not be valid and we may not be able to obtain and enforce patents and to maintain trade secret protection for the full commercial extent of our technology. The extent to which we are unable to do so could materially harm our business.

We or our licensors have applied for and will continue to apply for patents for certain products. Such applications may not result in the issuance of any patents, and any patents now held or that may be issued may not provide us with adequate protection from competition. Furthermore, it is possible that patents issued or licensed to us may be challenged successfully. In that event, if we have a preferred competitive position because of such patents, such preferred position would be lost. If we are unable to secure or to continue to maintain a preferred position, we could become subject to competition from the sale of generic products. Failure to receive, inability to protect, or expiration of our patents for medical use, manufacture, conjugation and labeling of Ac-225, the antibodies that we license from third parties, or subsequent related filings, would adversely affect our business and operations.

Patents issued or licensed to us may be infringed by the products or processes of others. The cost of enforcing our patent rights against infringers, if such enforcement is required, could be significant, and we do not currently have the financial resources to fund such litigation. Further, such litigation can go on for years and the time demands could interfere with our normal operations. There has been substantial litigation and other proceedings regarding patent and other intellectual property rights in the pharmaceutical industry. We may become a party to patent litigation and other proceedings. The cost to us of any patent litigation, even if resolved in our favor, could be substantial. Some of our competitors may be able to sustain the costs of such litigation more effectively than we can because of their substantially greater financial resources. Litigation may also absorb significant management time.

Unpatented trade secrets, improvements, confidential know-how and continuing technological innovation are important to our scientific and commercial success. Although we attempt to and will continue to attempt to protect our proprietary information through reliance on trade secret laws and the use of confidentiality agreements with our partners, collaborators, employees and consultants and other appropriate means, these measures may not effectively prevent disclosure of our proprietary information, and, in any event, others may develop independently, or obtain access to, the same or similar information.

Certain of our patent rights are licensed to us by third parties. If we fail to comply with the terms of these license agreements, our rights to those patents may be terminated, and we will be unable to conduct our business.

***If we are found to be infringing on patents or trade secrets owned by others, we may be forced to cease or alter our product development efforts, obtain a license to continue the development or sale of our products, and/or pay damages.***

Our manufacturing processes and potential products may violate proprietary rights of patents that have been or may be granted to competitors, universities or others, or the trade secrets of those persons and entities. As the pharmaceutical industry expands and more patents are issued, the risk increases that our processes and potential products may give rise to claims that they infringe the patents or trade secrets of others. These other persons could bring legal actions against us claiming damages and seeking to enjoin clinical testing, manufacturing and marketing of the affected product or process. If any of these actions are successful, in addition to any potential liability for damages, we could be required to obtain a license in order to continue to conduct clinical tests, manufacture or market the affected product or use the affected process. Required licenses may not be available on acceptable terms, if at all, and the results of litigation are uncertain. If we become involved in litigation or other proceedings, it could consume a substantial portion of our financial resources and the efforts of our personnel.

***Our ability to protect and enforce our patents does not guarantee that we will secure the right to commercialize our patents.***

A patent is a limited monopoly right conferred upon an inventor, and his successors in title, in return for the making and disclosing of a new and non-obvious invention. This monopoly is of limited duration but, while in force, allows the patent holder to prevent others from making and/or using its invention. While a patent gives the holder this right to exclude others, it is not a license to commercialize the invention where other permissions may be required for commercialization to occur. For example, a drug cannot be marketed without the appropriate authorization from the FDA, regardless of the existence of a patent covering the product. Further, the invention, even if patented itself, cannot be commercialized if it infringes the valid patent rights of another party.

***We rely on confidentiality agreements to protect our trade secrets. If these agreements are breached by our employees or other parties, our trade secrets may become known to our competitors.***

We rely on trade secrets that we seek to protect through confidentiality agreements with our employees and other parties. If these agreements are breached, our competitors may obtain and use our trade secrets to gain a competitive advantage over us. We may not have any remedies against our competitors and any remedies that may be available to us may not be adequate to protect our business or compensate us for the damaging disclosure. In addition, we may have to expend resources to protect our interests from possible infringement by others.

***The use of hazardous materials, including radioactive and biological materials, in our research and development efforts imposes certain compliance costs on us and may subject us to liability for claims arising from the use or misuse of these materials.***

Our research, development and manufacturing activities involves the controlled use of hazardous materials, including chemicals, radioactive and biological materials, such as radioactive isotopes. We are subject to federal, state, local and foreign environmental laws and regulations governing, among other matters, the handling, storage, use and disposal of these materials and some waste products. We cannot completely eliminate the risk of contamination or injury from these materials and we could be held liable for any damages that result, which could exceed our financial resources. We currently maintain insurance coverage for injuries resulting from the hazardous materials we use; however, future claims may exceed the amount of our coverage. Also, we do not have insurance coverage for pollution cleanup and removal. Currently the costs of complying with such federal, state, local and foreign environmental regulations are not significant, and consist primarily of waste disposal expenses. However, they could become expensive, and current or future environmental laws or regulations may impair our research, development, production and commercialization efforts.

***We may undertake international operations, which will subject us to risks inherent with operations outside of the United States.***

Although we do not have any foreign operations at this time, we intend to seek market clearances in foreign markets that we believe will generate significant opportunities. However, even with the cooperating of a commercialization partner, conducting drug development in foreign countries involves inherent risks, including, but not limited to difficulties in staffing, funding and managing foreign operations; unexpected changes in regulatory requirements; export restrictions; tariffs and other trade barriers; difficulties in protecting, acquiring, enforcing and litigating intellectual property rights; fluctuations in currency exchange rates; and potentially adverse tax consequences.

If we were to experience any of the difficulties listed above, or any other difficulties, any international development activities and our overall financial condition may suffer and cause us to reduce or discontinue our international development and registration efforts.

***We may not be successful in hiring and retaining key employees.***

Our future operations and successes depend in large part upon the continued service of key members of our senior management team whom we are highly dependent upon to manage our business. If any member of our current senior management terminates his or her employment with us, such a departure may have a material adverse effect on our business.

Our future success also depends on our ability to identify, attract, hire or engage, retain and motivate other well-qualified managerial, technical, clinical and regulatory personnel. There can be no assurance that such professionals will be available in the market, or that we will be able to retain existing professionals or meet or continue to meet their compensation requirements. Furthermore, the cost base in relation to such compensation, which may include equity compensation, may increase significantly, which could have a material adverse effect on us. Failure to establish and maintain an effective management team and work force could adversely affect our ability to operate, grow and manage our business.

***We may be subject, directly or indirectly, to federal and state healthcare fraud and abuse laws, false claims laws, and health information privacy and security laws. If we are unable to comply, or have not fully complied, with such laws, we could face substantial penalties.***

If we obtain FDA approval for any of our product candidates and begin commercializing those products in the United States, our operations may be directly, or indirectly through our customers, subject to various federal and state fraud and abuse laws, including, without limitation, the federal Anti-Kickback Statute, the federal False Claims Act, and physician sunshine laws and regulations. These laws may impact, among other things, our proposed sales, marketing, and education programs. In addition, we may be subject to patient privacy regulation by both the federal government and the states in which we conduct our business. The laws that may affect our ability to operate include:

- the federal Anti-Kickback Statute, which prohibits, among other things, persons from knowingly and willfully soliciting, receiving, offering or paying remuneration, directly or indirectly, to induce, or in return for, the purchase or recommendation of an item or service reimbursable under a federal healthcare program, such as the Medicare and Medicaid programs;

- federal civil and criminal false claims laws and civil monetary penalty laws, which prohibit, among other things, individuals or entities from knowingly presenting, or causing to be presented, claims for payment from Medicare, Medicaid, or other third-party payors that are false or fraudulent;
- the federal Health Insurance Portability and Accountability Act of 1996, or HIPAA, which created federal criminal statutes that prohibit executing a scheme to defraud any healthcare benefit program and making false statements relating to healthcare matters;
- HIPAA, as amended by the Health Information Technology and Clinical Health Act, or HITECH, and its implementing regulations, which imposes certain requirements relating to the privacy, security, and transmission of individually identifiable health information;
- the federal physician sunshine requirements under PPACA, which require certain manufacturers of drugs, devices, biologics, and medical supplies to report annually to the U.S. Department of Health and Human Services information related to payments and other transfers of value to physicians, other healthcare providers, and teaching hospitals, and ownership and investment interests held by physicians and other healthcare providers and their immediate family members and applicable group purchasing organizations;
- state law equivalents of each of the above federal laws, such as anti-kickback and false claims laws that may apply to items or services reimbursed by any third-party payor, including commercial insurers; state laws that require pharmaceutical companies to comply with the industry's voluntary compliance guidelines and the relevant compliance guidance promulgated by the federal government, or otherwise restrict payments that may be made to healthcare providers and other potential referral sources; state laws that require drug manufacturers to report information related to payments and other transfers of value to physicians and other healthcare providers or marketing expenditures; and state laws governing the privacy and security of health information in certain circumstances, many of which differ from each other in significant ways, thus complicating compliance efforts.

Because of the breadth of these laws and the narrowness of the statutory exceptions and safe harbors available, it is possible that some of our business activities could be subject to challenge under one or more of such laws. In addition, recent health care reform legislation has strengthened these laws. For example, the PPACA, among other things, amends the intent requirement of the federal anti-kickback and criminal healthcare fraud statutes. A person or entity no longer needs to have actual knowledge of this statute or specific intent to violate it to have committed a violation. Moreover, the PPACA provides that the government may assert that a claim including items or services resulting from a violation of the federal Anti-Kickback Statute constitutes a false or fraudulent claim for purposes of the False Claims Act.

If our operations are found to be in violation of any of the laws described above or any other governmental regulations that apply to us, we may be subject to penalties, including civil and criminal penalties, damages, fines, exclusion from participation in government health care programs, such as Medicare and Medicaid, imprisonment, and the curtailment or restructuring of our operations, any of which could adversely affect our ability to operate our business and our results of operations.

***Healthcare legislative reform measures may have a material adverse effect on our business and results of operations.***

In March 2010, President Obama signed the Patient Protection and Affordable Care Act, as amended by the Health Care and Education Reconciliation Act (collectively, “PPACA”), which makes changes that are expected to significantly impact the pharmaceutical industries. One of the principal aims of the PPACA as currently enacted is to expand health insurance coverage to approximately 32 million Americans who are currently uninsured. The consequences of this significant coverage expansion on the sales of our products, once they are developed, are unknown and speculative at this point.

The PPACA contains a number of provisions designed to generate the revenues necessary to fund the coverage expansions among other things. This includes new fees and taxes on manufacturers of certain branded prescription drugs, an abbreviated pathway for approval of biosimilar products, a new methodology by which rebates owed by manufacturers under the Medicaid Drug Rebate Program are calculated for drugs that are inhaled, infused, instilled, implanted or injected, increases in the minimum Medicaid rebates owed by manufacturers under the Medicaid Drug Rebate Program and an extension of the rebate program to individuals enrolled in Medicaid managed care organizations, and a new Medicare Part D coverage gap discount program, in which manufacturers must agree to offer 50% point-of-sale discounts off negotiated prices of applicable brand drugs to eligible beneficiaries during their coverage gap period, as a condition for the manufacturer’s outpatient drugs to be covered under Medicare Part D.

The PPACA provisions on comparative clinical effectiveness research extend the initiatives of the American Recovery and Reinvestment Act of 2009, also known as the stimulus package, which included \$1.1 billion in funding to study the comparative effectiveness of health care treatments and strategies. This stimulus funding was designated for, among other things, conducting, supporting or synthesizing research that compares and evaluates the risks and benefits, clinical outcomes, effectiveness and appropriateness of products. The PPACA appropriates additional funding to comparative clinical effectiveness research. Although Congress has indicated that this funding is intended to improve the quality of health care, it remains unclear how the research will impact current Medicare coverage and reimbursement or how new information will influence other third-party payor policies.

In addition, other legislative changes have been proposed and adopted since the PPACA was enacted. On August 2, 2011, the President Obama signed into law the Budget Control Act of 2011, which, among other things, creates the Joint Select Committee on Deficit Reduction to recommend proposals in spending reductions to Congress. The Joint Select Committee did not achieve a targeted deficit reduction of at least \$1.2 trillion for the years 2013 through 2021, which threatened to trigger the legislation’s automatic reduction to several government programs. This includes aggregate reductions of Medicare payments to providers of 2% per fiscal year, which went into effect in April 2013 and will stay in effect through 2024 unless additional Congressional action is taken. On January 2, 2013, Congress passed and President Obama signed the American Taxpayer Relief Act of 2012 which, among other things, further reduced Medicare payments to certain providers, including physicians, hospitals and cancer treatment centers. We expect that the PPACA, as well as other federal or state health care reform measures that may be adopted in the future, could have a material adverse effect on our industry generally and our ability to successfully commercialize our products or could limit or eliminate our spending on certain development projects. The taxes imposed by the PPACA and the expansion in the government’s role in the U.S. healthcare industry may result in decreased profits to us, lower reimbursement by payors for our products, and/or reduced medical procedure volumes, all of which may adversely affect our business, financial condition and results of operations.

***Managing our growth as we expand operations may strain our resources.***

We expect to need to grow rapidly in order to support additional, larger, and potentially international, pivotal clinical trials of our product candidates, which will place a significant strain on our financial, managerial and operational resources. In order to achieve and manage growth effectively, we must continue to improve and expand our operational and financial management capabilities. Moreover, we will need to increase staffing and to train, motivate and manage our employees. All of these activities will increase our expenses and may require us to raise additional capital sooner than expected. Failure to manage growth effectively could materially harm our business, financial condition or results of operations.

***We may expand our business through the acquisition of rights to new product candidates that could disrupt our business, harm our financial condition and may also dilute current stockholders' ownership interests in our company.***

Our business strategy includes expanding our products and capabilities, and we may seek acquisitions of product candidates, antibodies or technologies to do so. Acquisitions involve numerous risks, including substantial cash expenditures; potentially dilutive issuance of equity securities; incurrence of debt and contingent liabilities, some of which may be difficult or impossible to identify at the time of acquisition; difficulties in assimilating acquired technologies or the operations of the acquired companies; diverting our management's attention away from other business concerns; risks of entering markets in which we have limited or no direct experience; and the potential loss of our key employees or key employees of the acquired companies.

We can make no assurances that any acquisition will result in short-term or long-term benefits to us. We may incorrectly judge the value or worth of an acquired product, company or business. In addition, our future success would depend in part on our ability to manage the rapid growth associated with some of these acquisitions. We cannot assure that we will be able to make the combination of our business with that of acquired products, businesses or companies work or be successful. Furthermore, the development or expansion of our business or any acquired products, business or companies may require a substantial capital investment by us. We may not have these necessary funds or they might not be available to us on acceptable terms or at all. We may also seek to raise funds by selling shares of our preferred or common stock, which could dilute each current stockholder's ownership interest in the Company.

#### ***Risks Related to Ownership of Our Common Stock***

***Because we became public by means of a "reverse merger," we may not be able to attract the attention of major brokerage firms.***

Additional risks may exist since we became public through a "reverse merger." Securities analysts of major brokerage firms may not provide coverage of us since there is little incentive to brokerage firms to recommend the purchase of our common stock. We cannot assure you that brokerage firms will want to conduct any secondary offerings on behalf of our company in the future.

***The sale of securities by us in any equity or debt financing could result in dilution to our existing stockholders and have a material adverse effect on our earnings.***

We believe we need up to \$9.6 million in cash to finance research and development and to cover our ongoing working capital needs through 2015, and we have not completed efforts to establish a stable recurring source of revenues sufficient to cover our operating costs for the next twelve months. We have financed our operations primarily through sales of stock and the issuance of convertible promissory notes. It is likely that during the next twelve months we will seek to raise additional capital through the sales of stock and/or issuance of convertible debentures in order to expand our level of operations to continue our research and development efforts.

Any sale of common stock by us in a future private placement offering could result in dilution to the existing stockholders as a direct result of our issuance of additional shares of our capital stock. In addition, our business strategy may include expansion through internal growth or by establishing strategic relationships with targeted customers and vendor. In order to do so, or to finance the cost of our other activities, we may issue additional equity securities that could dilute our stockholders' stock ownership. We may also assume additional debt and incur impairment losses related to goodwill and other tangible assets if we acquire another company and this could negatively impact our earnings and results of operations.

Future sales of a substantial number of shares of our common stock in the public market, or the perception that such sales may occur, could adversely affect the then prevailing market price of our common stock and could make it more difficult for us to raise funds in the future through a public offering of our securities. We believe we need up to \$9.6 million in cash to finance research and development and to cover our ongoing working capital needs through 2015, and we have not completed efforts to establish a stable recurring source of revenues sufficient to cover our operating costs for the next twelve months, We have financed our operations primarily through sales of stock and the issuance of convertible promissory notes. It is likely that during the next twelve months we will to continue to finance our operations through sales of stock and/or issuance of convertible promissory notes.

***Our common stock has been considered a Penny Stock.***

During the fiscal year 2013 and through the first quarter of 2015 our common stock has or had been a penny stock, therefore, when our stock is considered a penny stock trading in our securities may be subject to penny stock considerations. Broker-dealer practices in connection with transactions in “penny stocks” are regulated by certain penny stock rules adopted by the SEC.

Penny stocks generally are equity securities with a price of less than \$5.00 (other than securities registered on certain national securities exchanges or quoted on the NASDAQ system). Penny stock rules require a broker-dealer, prior to a transaction in a penny stock not otherwise exempt from the rules, to deliver a standardized risk disclosure document that provides information about penny stocks and the risks in the penny stock market. The broker-dealer also must provide the customer with current bid and offer quotations for the penny stock, the compensation of the broker-dealer and its salesperson in the transaction, and monthly account statements showing the market value of each penny stock held in the customer’s account. The broker-dealer must also make a special written determination that the penny stock is a suitable investment for the purchaser and receive the purchaser’s written agreement to the transaction. These requirements may have the effect of reducing the level of trading activity, if any, in the secondary market for a security that becomes subject to the penny stock rules. The additional burdens imposed upon broker-dealers by such requirements may discourage broker-dealers from effecting transactions in our securities, which could severely limit their market price and liquidity of our securities. These requirements may restrict the ability of broker-dealers to sell our common stock and may affect your ability to resell our common stock.

***Our common stock is extremely thinly traded, so you may be unable to sell at or near asking prices or at all if you need to sell your shares to raise money or otherwise desire to liquidate your shares.***

Trading volume in our common stock is limited. This may inhibit investment by major institutional investment funds, including mutual funds, as well as individual investors. A higher volume trading market may never develop or be maintained. Active trading markets generally result in lower price volatility and more efficient execution of buy and sell orders. Absence of an active trading market reduces the liquidity of the shares traded there-in.

***Our Common Stock is subject to price volatility unrelated to our operations.***

The trading volume of our common stock has been and may continue to be extremely limited and sporadic. As a result of such trading activity, the quoted price for our common stock on the NYSE MKT may not necessarily be a reliable indicator of its fair market value.

We expect the market price of our Common Stock to fluctuate substantially due to a variety of factors, including market perception of our ability to achieve our planned growth, quarterly operating results of other companies in the same industry, trading volume in our common stock, changes in general conditions in the economy and the financial markets or other developments affecting the Company’s competitors or the Company itself. This volatility has had a significant effect on the market price of securities issued by many companies for reasons unrelated to their operating performance and could have the same effect on our common stock.

***Because we do not intend to pay dividends, stockholders will benefit from an investment in our Common Stock only if it appreciates in value.***

We have never declared or paid any cash dividends on our Preferred Stock or Common Stock. For the foreseeable future, it is expected that earnings, if any, generated from our operations will be used to finance the growth of our business, and that no dividends will be paid to holders of our Preferred Stock or Common Stock. As a result, the success of an investment in our Preferred Stock or Common Stock will depend upon any future appreciation in its value. There is no guarantee that our Preferred Stock or Common Stock will appreciate in value.

***Certain provisions of our Certificate of Incorporation and Bylaws and Delaware law make it more difficult for a third party to acquire us and make a takeover more difficult to complete, even if such a transaction were in the stockholders’ interest.***

Our Certificate of Incorporation and Bylaws and certain provisions of Delaware State law could have the effect of making it more difficult or more expensive for a third party to acquire, or from discouraging a third party from attempting to acquire, control of the Company, even when these attempts may be in the best interests of our stockholders. For example, we are governed by Section 203 of the Delaware General Corporation Law. In general, Section 203 prohibits a public Delaware corporation from engaging in a “business combination” with an “interested stockholder” for a period of three years after the date of the transaction in which the person became an interested stockholder, unless the business combination is approved in a prescribed manner. A “business combination” includes mergers, asset sales or other transactions resulting in a financial benefit to the stockholder. An “interested stockholder” is a person who, together with affiliates and associates, owns, or within three years, did own, 15% or more of the corporation’s outstanding voting stock. These provisions may have the effect of delaying, deferring or preventing a change in our control.

***Compliance with the reporting requirements of federal securities laws can be expensive.***

We are subject to the information and reporting requirements of the Exchange Act and other federal securities laws, and the compliance obligations of the Sarbanes-Oxley Act. The costs of preparing and filing annual and quarterly reports and other information with the SEC and furnishing audited reports to stockholders are substantial. In addition, we will incur substantial expenses in connection with the preparation of registration statements and related documents with respect to the registration of resale of the Common Stock.

***Applicable regulatory requirements, including those contained in and issued under the Sarbanes-Oxley Act, may make it difficult for us to retain or attract qualified officers and directors, which could adversely affect the management of its business and its ability to obtain or retain listing of our Common Stock.***

We may be unable to attract and retain those qualified officers, directors and members of board committees required to provide for effective management because of the rules and regulations that govern publicly held companies, including, but not limited to, certifications required by principal executive officers. The enactment of the Sarbanes-Oxley Act has resulted in the issuance of a series of related rules and regulations and the strengthening of existing rules and regulations by the SEC, as well as the adoption of new and more stringent rules by the stock exchanges. The perceived increased personal risk associated with these changes may deter qualified individuals from accepting roles as directors and executive officers.

Further, some of these changes heighten the requirements for board or committee membership, particularly with respect to an individual's independence from the corporation and level of experience in finance and accounting matters. We may have difficulty attracting and retaining directors with the requisite qualifications. If we are unable to attract and retain qualified officers and directors, the management of our business and our ability to obtain or retain listing of our shares of Common Stock on any stock exchange (assuming we elect to seek and are successful in obtaining such listing) could be adversely affected.

***If we fail to maintain an effective system of internal controls, we may not be able to accurately report our financial results or detect fraud. Investors could lose confidence in our financial reporting and this may decrease the trading price of our Common Stock.***

We must maintain effective internal controls to provide reliable financial reports and detect fraud. As disclosed in this report, we have previously identified material weaknesses in our internal control over financial reporting because we did not have sufficient written policies and procedures for accounting and financial reporting and we did not have effective controls over period end financial disclosures and reporting processes. During 2014, our management remediated these previously identified material weaknesses. In future periods, we may identify additional deficiencies in our system of internal controls over financial reporting that may require remediation. There can be no assurances that any such future deficiencies identified may not be material weaknesses that would be required to be reported in future periods. Failure to maintain an effective system of internal controls could harm our operating results and cause investors to lose confidence in our reported financial information. Any such loss of confidence would have a negative effect on the trading price of our Common Stock.

***The price of our common stock may become volatile, which could lead to losses by investors and costly securities litigation.***

The trading price of our Common Stock may be highly volatile and could fluctuate in response to factors such as:

- actual or anticipated variations in our operating results;
- announcements of developments by us or our competitors;
- the timing of IND and/or BLA approval, the completion and/or results of our clinical trials;
- regulatory actions regarding our products;
- announcements by us or our competitors of significant acquisitions, strategic partnerships, joint ventures or capital commitments;
- adoption of new accounting standards affecting the our industry;

- additions or departures of key personnel;
- introduction of new products by us or our competitors;
- sales of the our Common Stock or other securities in the open market; and
- other events or factors, many of which are beyond our control.

The stock market is subject to significant price and volume fluctuations. In the past, following periods of volatility in the market price of a company's securities, securities class action litigation has often been initiated against such a company. Litigation initiated against us, whether or not successful, could result in substantial costs and diversion of our management's attention and Company resources, which could harm our business and financial condition.

**ITEM 1B. UNRESOLVED STAFF COMMENTS.**

None.

**ITEM 2. PROPERTIES.**

The Company does not own any property. The Company has office space at 546 Fifth Avenue, 14th Floor, New York, NY 10036 and is rented on a month to month basis at approximately \$7,000 per month. The Company also entered into a sublease agreement for office space located at 379 Thornall Street, 6th Floor, Edison, NJ. This agreement expires on September 30, 2016 and the rent is approximately \$9,000 per month.

**ITEM 3. LEGAL PROCEEDINGS.**

From time to time, we may become involved in various lawsuits and legal proceedings, which arise in the ordinary course of business. Litigation is subject to inherent uncertainties, and an adverse result in these or other matters may arise from time to time that may harm business. We are currently not aware of any such legal proceedings or claims that will have, individually or in the aggregate, a material adverse effect on our business, financial condition or operating results.

**ITEM 4. MINE SAFETY DISCLOSURES.**

Not Applicable.

## PART II

### ITEM 5. MARKET FOR REGISTRANT'S COMMON EQUITY, RELATED STOCKHOLDERS MATTERS, AND ISSUER PURCHASE OF EQUITY SECURITIES.

#### Market Information

Our common stock is listed for quotation on the NYSE MKT under the symbol "ATNM". The following table sets forth, for the quarters indicated, the high and low sale per share sales prices of our common stock as reported by the NYSE MKT or www.otcbb.com, as applicable. On March 26, 2014 our common stock commenced trading on the NYSE MKT. Prior to March 26, 2014, our common stock is listed on the OTCQB, under the symbol "ATNM".

#### Quarterly Common Stock Price Ranges

<b>Fiscal Year 2014, Quarter Ended:</b>	<b>High</b>	<b>Low</b>
March 31, 2014	\$ 12.49	\$ 4.51
June 30, 2014	\$ 15.00	\$ 6.74
September 30, 2014	\$ 7.77	\$ 5.93
December 31, 2014	\$ 8.12	\$ 5.05

  

<b>Fiscal Year 2013, Quarter Ended:</b>	<b>High</b>	<b>Low</b>
March 31, 2013	\$ 7.75	\$ 1.50
June 30, 2013	\$ 6.25	\$ 3.00
September 30, 2013	\$ 6.40	\$ 3.10
December 31, 2013	\$ 7.91	\$ 4.30

#### Holdings

As of March 16, 2015 there were 35,482,076 shares of common stock issued and outstanding, which were held by 120 holders of record. There are no shares of preferred stock outstanding. On March 13, 2015, the closing price of our common stock as reported on the NYSE MKT as \$2.67 per share.

Of the 35,482,076 shares of common stock issued and outstanding, 645,735 of such shares are restricted shares under the Securities Act. None of these restricted shares are eligible for resale absent registration or an exemption from registration under the Securities Act. As of the date hereof, until the provisions of Rule 144 are complied with, the exemption from registration provided by Rule 144 under the Securities Act is not available for these shares pursuant to Rule 144(i).

#### Registration Rights

Certain shareholders are entitled to certain registration rights, including piggy-back registration rights.

The following shares are subject to registration rights:

- Certain Investors have registration rights pursuant to the following agreement:

Second Amended and Restated Investor Rights Agreement, dated as of October 5, 2011 (the “Agreement”), by and among Actinium Pharmaceuticals, Inc., a Delaware corporation, Actinium Holdings Limited (formerly named General Atlantic Investments Limited”), a Bermuda corporation, and the persons identified as parties in the Agreement (collectively, the “Holders”).

Pursuant to the terms of the Agreement the Holders have the following registration rights:

(1) Piggyback Rights. If at any time or from time to time, the Company shall determine to register any of its equity securities for its own account in a direct public offering or an underwritten public offering, the Company will: (i) prior to the filing of such registration give to the Holders written notice thereof; and (ii) include in such registration (and any related qualification under blue sky laws or other compliance), and underwriting, all the Registrable Securities (as defined in the Agreement) specified in a written request or requests made within thirty (30) days after receipt of such written notice from the Company by any Holder.

(2) Demand Registration - If at any time after the earlier of (i) the third anniversary of the October 5, 2011, or (ii) three months after the Company’s Common Stock becomes publicly traded (whether through a Qualified Initial Public Offering, a Pubco Transaction (each as defined in the Agreement) or otherwise, (the “Start Date”)), whichever is earlier, Holders of at least thirty-five percent (35%) of the Registrable Securities (as defined in the Agreement) then outstanding request in writing that the Company file a registration statement under the Securities Act covering the registration of at least 20% of the then outstanding Registrable Securities (as defined in the Agreement), or a lesser percentage if the anticipated aggregate offering price, net of underwriting discounts and commissions, would exceed \$10,000,000.

## **Dividends**

We have never declared or paid a cash dividend. Any future decisions regarding dividends are made by our Board of Directors. We currently intend to retain and use any future earnings for the development and expansion of our business and do not anticipate paying any cash dividends in the foreseeable future. Our Board of Directors has complete discretion on whether to pay dividends. Even if our Board of Directors decides to pay dividends, the form, frequency and amount will depend upon our future operations and earnings, capital requirements and surplus, general financial condition, contractual restrictions and other factors that the Board of Directors may deem relevant.

## **Securities Authorized for Issuance under Equity Compensation Plans**

The Company currently has two equity compensation plans defined as follows:

In December 2013, our shareholders approved the Company's 2013 Stock Plan. The expiration date of the plan is September 9, 2023 and the total number of underlying shares of the Company's common stock available for grant to employees, directors and consultants of the Company under the plan is 5,750,000 shares.

In December 2013, our shareholders approved the Company's 2013 Equity Incentive Plan. The expiration date of the plan is September 9, 2023 and the total number of shares of our common stock available for grant to employees, directors and consultants of us under the plan is 1,000,000 shares.

## **ITEM 6. SELECTED FINANCIAL DATA.**

Smaller reporting companies are not required to provide the information required by this item.

Our public float was greater than \$75 million as of June 30, 2014, the last business day of our second quarter of fiscal year 2014 and accordingly we became an accelerated filer at the end of fiscal year 2014. In accordance with Item 10(f)(2)(i) of Regulation S-K, we will transition from the scaled disclosure requirements available to smaller reporting companies to the disclosure requirements applicable to accelerated filers beginning with our quarterly report on Form 10-Q for our first quarter of fiscal year 2015.

## ITEM 7. MANAGEMENT'S DISCUSSION AND ANALYSIS OF FINANCIAL CONDITION AND RESULTS OF OPERATION.

*The information and financial data discussed below is derived from the audited consolidated financial statements of Actinium Pharmaceuticals, Inc. for its fiscal years ended December 31, 2014 and 2013. The consolidated financial statements of Actinium Pharmaceuticals, Inc. were prepared and presented in accordance with generally accepted accounting principles in the United States. The information and financial data discussed below is only a summary and should be read in conjunction with the historical financial statements and related notes of Actinium Pharmaceuticals, Inc. contained elsewhere in this Report. The financial statements contained elsewhere in this Report fully represent Actinium Pharmaceuticals, Inc.'s financial condition and operations; however, they are not indicative of the Company's future performance. See "Cautionary Note Regarding Forward Looking Statements" above for a discussion of forward-looking statements and the significance of such statements in the context of this Report.*

### Overview

Actinium is a biotechnology company committed to developing breakthrough therapies for life threatening diseases using its alpha particle immunotherapy (APIT) platform and other related and similar technologies. Actinium, together with its wholly owned subsidiary, MedActinium, Inc. (MAI), (hereinafter referred to collectively as "Actinium") has initiated collaborative efforts with large institutions to establish the proof of concept of alpha particle immunotherapy and has supported one Phase 1/2 clinical trial and one Phase 1 clinical trial at Memorial Sloan-Kettering Cancer Center ("MSKCC") under an MSKCC Physician IND Application. In 2012, Actinium launched a multi-center corporate sponsored trial in acute myeloid leukemia (AML) patients. Actinium's objective, through research and development, is to produce reliable cancer fighting products which utilize monoclonal antibodies linked with alpha particle emitters or other appropriate payloads to provide very potent targeted therapies. The initial clinical trials of Actinium's compounds have been with patients having acute myeloid leukemia and it is believed that Actinium's APIT platform will have wider applicability for different types of cancer where suitable monoclonal antibodies can be found.

We were incorporated under the laws of the State of Nevada on October 6, 1997. We were a shell entity that was in the market for a merger with an appropriate operating company.

On December 28, 2012, we entered into a transaction (the "Share Exchange"), pursuant to which the Company acquired 21% of the issued and outstanding equity securities of Actinium Pharmaceuticals, Inc. ("Actinium"), in exchange for the issuance of 4,333,489 shares of common stock, par value \$0.001 per share, of the Company (the "Common Stock"), which were issued to the shareholders of Actinium. As a result of the Share Exchange, the former shareholders of Actinium became the controlling shareholders of the Company. The Share Exchange was accounted for as a reverse takeover/recapitalization effected by a share exchange, wherein Actinium is considered the acquirer for accounting and financial reporting purposes. As a result of the Share Exchange, the Company assumed the business and operations of Actinium.

On March 11, 2013, Actinium Corporation continued its Share Exchange with us, whereby we acquired an additional 36% of the issued and outstanding capital stock of Actinium Corporation from the Actinium Corporation Shareholders in exchange for the issuance of 7,756,840 shares of Common Stock of us to the Actinium Shareholders.

On April 11, 2013, the change of domicile from the State of Nevada to the State of Delaware and the change of Cactus Ventures, Inc.'s name from Cactus Ventures, Inc. to Actinium Pharmaceuticals, Inc. became effective in accordance with Articles of Merger filed with the State of Nevada and a Certificate of Merger filed with the State of Delaware. In connection with the name change we also changed (i) the name of our subsidiary Actinium Pharmaceuticals, Inc. to Actinium Corporation, (ii) our par value to \$0.001 per share, and (iii) the number of authorized shares of preferred stock to 10 million shares. Effective April 18, 2013 our new trading symbol became ATNM. On September 25, 2013, we merged with our subsidiary, Actinium Corporation, and we were the surviving entity of the merger. In January 2014 we increased our authorized shares of common stock to 200 million shares and authorized shares of preferred stock to 50 million shares.

On August 22, 2013, Actinium Corporation continued its Share Exchange with us, whereby we acquired an additional 38.2% of the issued and outstanding capital stock of Actinium Corporation from the Actinium Corporation Shareholders in exchange for the issuance of 6,383,475 shares of Common Stock of us to the Actinium Shareholders. On September 25, 2013 in accordance with a Certificate of Ownership Merging Actinium Corporation into us, we merged with Actinium Corporation, and Actinium Corporation ceased to exist. As a result of the merger, Actinium Corporation stock owned by us has been cancelled and each share of Actinium Corporation not owned by us was exchanged for 0.333 shares of our common stock.

On March 26, 2014, we began trading our common stock on the NYSE MKT market.

### **Plan of Operation**

We develop drugs for the treatment of cancer with the intent to cure or significantly improve survival of the affected patients. None of our drugs have been approved for sale in the United States or elsewhere. We have no commercial operations in sales or marketing of our products. All our product candidates are under development. In order to market and sell our products we must conduct clinical trials on patients and obtain regulatory approvals from appropriate regulatory agencies like the Food and Drug Administration (FDA) in the United States and similar agencies elsewhere in the world.

Our products under development are monoclonal antibodies labeled with radioisotopes. We have one program with an antibody labeled with a beta emitter and several programs based on a proprietary patent protected platform technology called APIT. Our APIT technology is based on attaching actinium 225 (Ac-225) or bismuth 213 (Bi-213) alpha emitting radioisotopes to monoclonal antibodies. Alpha emitting radioisotopes are unstable chemical elements that decay by releasing alpha particles. Alpha particles can kill any cell in the immediate proximity of where they are released. Monoclonal antibodies are genetically engineered proteins that specifically target certain cells, including cancer cells. It is crucial for the success of our drug candidates to contain monoclonal antibodies that can successfully seek cancer cells and can kill them with the attached isotope while not harming nearby normal cells. We do not have technology and operational capabilities to develop and manufacture such monoclonal antibodies and we therefore rely on collaboration with third parties to gain access to such monoclonal antibodies. We have secured rights to two monoclonal antibodies, HuM195 (Lintuzumab), in 2003 through a collaborative licensing agreement with Abbvie Biotherapeutics Corp and BC8 in 2012 with the Fred Hutchinson Cancer Research Center ("FHCRC"). We expect to negotiate collaborative agreements with other potential partners that would provide us with access to additional monoclonal antibodies. Establishing and maintaining such collaborative agreements is a key to our success as a company.

Under our own sponsorship as well as activity at FHCRC, we have four product candidates in active clinical trials: Actimab-A (HuM195-Ac-225), Iomab-B (BC8-I-131), BC8-Y-90 and BC8-SA. At this time, the Company is actively pursuing development of Actimab-A and Iomab-B while BC8-Y-90 and BC8-SA are in physician sponsored clinical phase 1 trials at the FHCRC. Actimab-A is a combination of the monoclonal antibody we have in-licensed, Lintuzumab (HuM195), and the alpha emitting isotope actinium 225. Actimab-A has shown promising results throughout preclinical development and an ongoing clinical trial started in 2006 in AML in the elderly. We have expanded the number of patients and number of clinical centers by commencing a new AML clinical trial which we launched in 2012. This trial targets newly diagnosed AML patients over the age of 60. In order to conduct the trial we are engaged in funding, monitoring and quality assurance and control of the Lintuzumab antibody; procurement of actinium 225 isotope; funding, monitoring and quality assurance and control of the drug candidate Actimab-A manufacturing and organizing and monitoring clinical trials. We estimate that the direct costs to completion of both parts of the ongoing Phase 1/2 trial will be approximately \$7 million. Iomab-B is a combination of the in-licensed monoclonal antibody BC8 and the beta emitting radioisotope iodine 131. This construct has been extensively tested in Phase I and Phase 2 clinical trials in approximately 250 patients with different blood cancer indications who were in need of HSCT. Iomab-B is used to condition the bone marrow of these patients by destroying blood cancer cells in their bone marrow and elsewhere thus allowing for a subsequent transplant containing healthy donor bone marrow stem cells. We have decided to develop this drug candidate by initially focusing on the patients over 50 with active acute myeloid leukemia in relapse and/or refractory to existing treatments. Our intention is to request the FDA in 2015 to allow us to enter into a pivotal trial with Iomab-B. We estimate the direct costs of such a trial to completion anticipated in 2017 will be approximately \$25-30 million.

We have primarily management position employees and consultants who direct, organize and monitor the activities described above through contractors. Much of the in vivo laboratory and clinical work contracted for by the Company was conducted at MSKCC in New York. We also made clinical trial arrangements with other well-known cancer centers. Our Actimab-A drug candidate and its components are contract manufactured and maintained under our supervision by specialized contract manufacturers and suppliers in the United States, including IsoTex Diagnostics, Oak Ridge National Laboratory, Pacific GMP, Fischer Bioservices, BioReliance and others.

We have never generated revenue. Currently we do not have a recurring source of revenues to cover our operating costs. As of December 31, 2014 and 2013, our accumulated deficit was \$91.2 million and \$66.5 million, respectively. Our net loss was \$24.7 million, and \$10.8 million for the years ended December 31, 2014 and 2013, respectively. As of December 31, 2014, our cash balance was \$6.7 million. In February 2015, we raised total net proceeds of approximately \$18.5 million from the completion of an underwritten public offering of common stock and warrants. We believe that we have enough cash on hand to fund our operations through the next 12 months.

### Opportunities, Challenges and Risks

The market for drugs for cancer treatment is a large market in need of novel products, in which successful products can command multibillion dollars in annual sales. A number of large pharmaceutical and biotechnology company regularly acquire products in development, with preference given to products in Phase 2 or later clinical trials. These deals are typically structured to include an upfront payment that ranges from several million dollars to tens of million dollars or more and additional milestone payments tied to regulatory submissions and approvals and sales milestones. Our goal is to develop our product candidates through Phase 2 clinical trials and enter into partnership agreements with one or more large pharmaceutical and/or biotechnology companies.

We believe our future success will be heavily dependent upon our ability to successfully conduct clinical trials and preclinical development of our drug candidates. This will in turn depend on our ability to continue our collaboration with MSKCC and our Clinical Advisory Board members. In addition, we plan to continue and expand other research and clinical trial collaborations. Moreover, we will have to maintain sufficient supply of actinium 225 and successfully maintain and if and when needed replenish or obtain our reserves of monoclonal antibodies. We will have to maintain and improve manufacturing procedures we have developed for production of our drug candidates from the components that include the iodine 131 and actinium 225 isotopes, monoclonal antibodies and other materials. It is possible that despite our best efforts our clinical trials results may not meet regulatory requirements for approval. If our efforts are successful, we will be able to partner our development stage products on commercially favorable terms only if they enjoy appropriate patent coverage and/or considerable know-how and other protection that ensures market exclusivity. For that reason we intend to continue our efforts to maintain existing and generate new intellectual property. Intellectual property is a key factor in the success of our business as well as market exclusivity.

To achieve the goals discussed above we intend to continue to invest in research and development at high and constantly increasing rates thus incurring further losses until one or more of our products are sufficiently developed to partner them to large pharmaceutical and biotechnology companies.

### Results of Operations – Year Ended December 31, 2014 Compared to the Year Ended December 31, 2013

The following table sets forth, for the periods indicated, data derived from our statements of operations:

	<b>For the year ended</b>	
	<b>December 31,</b>	
	<b>2014</b>	<b>2013</b>
Revenues	\$ -	\$ -
Operating expenses:		
Research and development, net of reimbursements	12,267,313	3,109,331
General and administrative	10,175,323	3,476,879
Depreciation and amortization	37,908	1,560
Loss on disposition of equipment	-	4,122
Total operating expenses	<u>22,480,544</u>	<u>6,591,892</u>
Other expense:		
Interest expense	(866)	(2,508)
Loss change in fair value of derivative liabilities	(2,206,099)	(4,179,392)
Total other expense	<u>(2,206,965)</u>	<u>(4,181,900)</u>
Net loss	<u>\$ (24,687,509)</u>	<u>\$ (10,773,792)</u>

**Revenues**

We recorded no commercial revenues for the years ended December 31, 2014 and 2013.

**Research and Development Expense**

Research and development expenses, net of reimbursements, increased by approximately \$9.2 million to approximately \$12.3 million for the year ended December 31, 2014 compared to approximately \$3.1 million for the year ended December 31, 2013. The increase was primarily due to increased manufacturing costs with Iomab-B totaling approximately \$5.4 million and the on-going Actimab-A clinical costs of approximately \$1.5 million.

The increase was also attributable to the increase in compensation cost of approximately \$1.5 million as a result of an increase in headcount and an increase in stock-based compensation related to research and development personnel.

**General and Administrative Expenses**

Overall, total general and administrative expenses increased by approximately \$6.7 million to \$10.2 million for the year ended December 31, 2014 compared to approximately \$3.5 million for the year ended December 31, 2013. The increase was largely attributable to increases in stock-based compensation costs and salaries and benefits of approximately \$4.9 million and \$0.9 million, respectively.

We expect to incur increased general and administrative costs in the future.

**Other Expense**

Other expense was \$2.2 million and \$4.2 million for the years ended December 31, 2014 and 2013, respectively. The year over year change is mainly attributable to the fluctuation of the Company's stock price and its impact on the derivative value of certain warrants the Company issued in connection with the December 2012 financing.

**Net Loss**

Net loss increased by approximately \$13.9 million to approximately \$24.7 million for the year ended December 31, 2014 compared to approximately \$10.8 million for the year ended December 31, 2013. The increase was primarily due to additional costs incurred by the Company in research and development expenses, non-cash stock-based compensation costs and professional fees as discussed above which was partially offset by a decrease in the loss from change in fair value of the Company's derivative warrant liability.

## Liquidity and Capital Resources

We have financed our operations primarily through sales of the Company's stock.

We did not have any cash or cash equivalents held in financial institutions located outside of the United States as of December 31, 2014 and 2013. We do not anticipate this practice will change in the future.

The following tables sets forth selected cash flow information for the periods indicated:

	For the year ended	
	December 31,	
	2014	2013
Cash used in operating activities	\$ (14,348,754)	(6,292,416)
Cash used in investing activities	(186,421)	(16,592)
Cash provided by financing activities	15,708,611	6,223,705
Net change in cash	\$ 1,173,436	(85,303)

Net cash used in operating activities was approximately \$14.3 million for the year ended December 31, 2014 compared to approximately \$6.3 million used in operations for the same period in 2013. Cash used in operations increased due to the increase in spending related to the preparations for and eventual launch and conduct of a multicenter clinical trial and an increase in spending related to professional fees combined with an increase in payroll-related expenses.

Net cash used in investing activities was approximately \$186,000 for the year ended December 31, 2014 compared to approximately \$17,000 used in investing activities for the same period in 2013. Cash used in investing activities increased due to the purchase of computers and lab equipment during 2014 compared to the prior year.

Net cash provided by financing activities were approximately \$15.7 million and approximately \$6.2 million for each of the years ended December 31, 2014 and 2013, respectively. During the year ended December 31, 2014, the Company issued common stock and received net proceeds of approximately \$15.4 million and approximately \$0.4 million from the exercise of warrants and options. During the year ended December 31, 2013, the Company issued common stock and received net proceeds of approximately \$2.9 million and approximately \$3.5 million from the exercise of warrants and options. These increases were offset by payments on notes payable of \$162,000 and \$140,000 for the year ended December 31, 2014 and 2013, respectively.

We have experienced cumulative losses of approximately \$91.2 million from inception (June 13, 2000) through December 31, 2014, and have a stockholders' deficit of \$1.9 million at December 31, 2014.

### Off-Balance Sheet Arrangements

We do not have any off-balance sheet arrangements that have or are reasonably likely to have a current or future effect on our financial condition, changes in financial condition, revenues or expenses, results of operations, liquidity, capital expenditures or capital resources that is material to investors.

### Seasonality

We do not have a seasonal business cycle. Our operating results are generally derived evenly throughout the calendar year.

## **Critical Accounting Policies**

Our financial statements have been prepared in accordance with accounting principles generally accepted in the United States. To prepare these financial statements, we must make estimates and assumptions that affect the reported amounts of assets and liabilities. These estimates also affect our expenses. Judgments must also be made about the disclosure of contingent liabilities. Actual results could be significantly different from these estimates. We believe that the following discussion addresses the accounting policies that are necessary to understand and evaluate our reported financial results.

### **Derivatives**

All derivatives are recorded at fair value and recorded on the balance sheet. Fair values for securities traded in the open market and derivatives are based on quoted market prices. Where market prices are not readily available, fair values are determined using market based pricing models incorporating readily observable market data and requiring judgment and estimates.

### **Fair Value of Financial Instruments**

Fair value is defined as the price that would be received to sell an asset, or paid to transfer a liability, in an orderly transaction between market participants. A fair value hierarchy has been established for valuation inputs that gives the highest priority to quoted prices in active markets for identical assets or liabilities and the lowest priority to unobservable inputs. The fair value hierarchy is as follows:

- Level 1 Inputs – Unadjusted quoted prices in active markets for identical assets or liabilities that the reporting entity has the ability to access at the measurement date.
- Level 2 Inputs – Inputs other than quoted prices included in Level 1 that are observable for the asset or liability, either directly or indirectly. These might include quoted prices for similar assets or liabilities in active markets, quoted prices for identical or similar assets or liabilities in markets that are not active, inputs other than quoted prices that are observable for the asset or liability (such as interest rates, volatilities, prepayment speeds, credit risks, etc.) or inputs that are derived principally from or corroborated by market data by correlation or other means.
- Level 3 Inputs – Unobservable inputs for determining the fair values of assets or liabilities that reflect an entity's own assumptions about the assumptions that market participants would use in pricing the assets or liabilities.

### **Income Taxes**

The Company uses the asset and liability method in accounting for income taxes. Under this method, deferred tax assets and liabilities are determined based on differences between financial reporting and income tax carrying amounts of assets and liabilities and are measured using the enacted tax rates and laws that will be in effect when the differences are expected to reverse. The Company reviews deferred tax assets for a valuation allowance based upon whether it is more likely than not that the deferred tax asset will be fully realized. A valuation allowance, if necessary, is provided against deferred tax assets, based upon management's assessment as to their realization.

### **Research and Development Costs**

Research and development costs are expensed as incurred. Research and development reimbursements and grants are recorded by the Company as a reduction of research and development costs.

### **Share-Based Payments**

We estimate the fair value of each stock option award at the grant date by using the Black-Scholes option pricing model and common shares based on the market price of the Company's common stock on the date of the share grant. The fair value determined represents the cost for the award and is recognized over the vesting period during which an employee is required to provide service in exchange for the award. As share-based compensation expense is recognized based on awards ultimately expected to vest, we reduce the expense for estimated forfeitures based on historical forfeiture rates. Previously recognized compensation costs may be adjusted to reflect the actual forfeiture rate for the entire award at the end of the vesting period. Excess tax benefits, if any, are recognized as an addition to paid-in capital.

## Recent Accounting Pronouncements

In June 2014, the Financial Accounting Standards Board issued Accounting Standards Update 2014-10, Development Stage Entities. The amendments in this Update remove the definition of a development stage entity from Topic 915, thereby removing the distinction between development stage entities and other reporting entities from U.S. GAAP. In addition, the amendments eliminate the requirements for development stage entities to (1) present inception-to-date information on the statements of income, cash flows, and shareholder's equity, (2) label the financial statements as those of a development stage entity, (3) disclose a description of the development stage activities in which the entity is engaged, and (4) disclose in the first year in which the entity is no longer a development stage entity that in prior years it had been in the development stage. The amendments also clarify that the guidance in Topic 275, Risks and Uncertainties, is applicable to entities that have not commenced planned principal operations. Finally, the amendments also remove paragraph 810-10-15-16, which states that a development stage entity does not meet the condition in paragraph 810-10-15-14(a) to be a variable interest entity (VIE) if (1) the entity can demonstrate that the equity invested in the legal entity is sufficient to permit it to finance the activities it is currently engaged in and (2) the entity's governing documents and contractual arrangements allow additional equity investments. Under the amendments, all entities within the scope of the Variable Interest Entities Subsections of Subtopic 810-10, Consolidation—Overall, would be required to evaluate whether the total equity investment at risk is sufficient using the guidance provided in paragraphs 810-10-25-45 through 25-47, which requires both qualitative and quantitative evaluations. The amendments in this Update are effective for annual reporting periods beginning after December 15, 2014, and interim periods therein, and early adoption is required. The Company evaluated and adopted ASU 2014-10 at June 30, 2014.

In June 2014, the Financial Accounting Standards Board issued Accounting Standards Update 2014-12, Compensation—Stock Compensation. The amendments in this update apply to reporting entities that grant their employees share-based payments in which the terms of the award provide that a performance target can be achieved after the requisite service period. The amendments in this Update are effective for annual periods and interim periods within those annual periods beginning after December 15, 2015, and early adoption is permitted. The Company is currently evaluating the effects of ASU 2014-12 on the consolidated financial statements.

In August 2014, the Financial Accounting Standards Board issued Accounting Standards Update 2014-15, Presentation of Financial Statements- Going Concern. The Update provides U.S. GAAP guidance on management's responsibility in evaluating whether there is substantial doubt about a company's ability to continue as a going concern and about related footnote disclosures. For each reporting period, management will be required to evaluate whether there are conditions or events that raise substantial doubt about a company's ability to continue as a going concern within one year from the date the financial statements are issued. The amendments in this Update are effective for the annual period ending after December 15, 2016, and for annual periods and interim periods thereafter. The Company is currently evaluating the effects of ASU 2014-15 on the consolidated financial statements.

Management does not believe that any other recently issued, but not yet effective accounting pronouncements, if adopted, would have a material effect on the accompanying consolidated financial statements.

## Subsequent Event

On February 11, 2015, we completed an underwritten offering of 4,444,444 shares of our common stock and warrants to purchase an aggregate of 3,333,333 shares of our common stock at a price to the public of \$4.50 per share. The shares of common stock and warrants were issued separately. The warrants will be exercisable for a period of 4 years at an exercise price of \$6.50 per share. We received net proceeds of approximately \$18.5 million, after deducting underwriting discounts and commissions and estimated offering expenses payable by us, and excluding the underwriters' over-allotment option. In addition, we granted the underwriters a 30-day option to purchase up to an additional 666,666 shares of common stock and warrants to purchase 499,999 shares of common stock solely to cover over-allotments, if any. The underwriter did not exercise the over-allotment option.

On February 18, 2015, the Company granted employees and its board members 456,000 options to purchase the Company's common stock with exercise price of \$3.58 and a term of 10 years with vesting over a 4-year period. The options have an aggregated fair value of \$1.0 million that was calculated using the Black-Scholes option-pricing model. Variables used in the Black-Scholes option-pricing model include: (1) discount rate of 1.66% (2) expected life of 6 years, (3) expected volatility of 82.47%, and (4) zero expected dividends.

Subsequent to December 31, 2014, the Company issued 891,131 common shares to for cashless exercise of warrants, issued 164,662 shares to consultants in connection with various consulting agreements and issued 10,000 shares to an employee pursuant to an employee agreement.

## ITEM 7A. QUANTITATIVE AND QUALITATIVE DISCLOSURES ABOUT MARKET RISK.

Smaller reporting companies are not required to provide the information required by this item.

Our public float was greater than \$75 million as of June 30, 2014, the last business day of our second quarter of fiscal year 2014 and accordingly we became an accelerated filer at the end of fiscal year 2014. In accordance with Item 10(f)(2)(i) of Regulation S-K, we will transition from the scaled disclosure requirements available to smaller reporting companies to the disclosure requirements applicable to accelerated filers beginning with our quarterly report on Form 10-Q for our first quarter of fiscal year 2015.

## **ITEM 8. FINANCIAL STATEMENTS AND SUPPLEMENTARY DATA.**

### REPORT OF MANAGEMENT

The management of Actinium Pharmaceutical, Inc. (“Actinium”) is responsible for establishing and maintaining adequate internal control over financial reporting, as defined in Rule 13a-15(f) or 15d-15(f) under the Securities Exchange Act of 1934. Actinium's internal control system was designed to provide reasonable assurance to the company's management and Board of Directors regarding the preparation and fair presentation of published financial statements.

Actinium management assessed the effectiveness of the company's internal control over financial reporting as of December 31, 2014. In making this assessment, it used the criteria set forth by the Committee of Sponsoring Organizations of the Treadway Commission (COSO) in Internal Control – Integrated Framework (2013 framework). Based on its assessment, Actinium management believes that, as of December 31, 2014, the Company's internal control over financial reporting is effective based on those criteria.

GBH CPAs, PC, the independent registered public accounting firm that audited the financial statements included in this Annual Report, has issued an attestation report on the company's internal control over financial reporting.

/s/ Kaushik J. Dave

Kaushik J. Dave  
President, Chief Executive Officer, Interim Chief Financial Officer and Director  
March 16, 2015

REPORT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM  
ON INTERNAL CONTROL OVER FINANCIAL REPORTING

To the Board of Directors and Stockholders of  
Actinium Pharmaceuticals, Inc.  
New York, NY

We have audited Actinium Pharmaceutical, Inc.'s internal control over financial reporting as of December 31, 2014, based on criteria established in *Internal Control—Integrated Framework (2013)* issued by the Committee of Sponsoring Organizations of the Treadway Commission (COSO). Actinium Pharmaceutical, Inc.'s management is responsible for maintaining effective internal control over financial reporting and for its assessment of the effectiveness of internal control over financial reporting included in the accompanying 10-K. Our responsibility is to express an opinion on the company's internal control over financial reporting based on our audit.

We conducted our audit in accordance with the standards of the Public Company Accounting Oversight Board (United States). Those standards require that we plan and perform the audit to obtain reasonable assurance about whether effective internal control over financial reporting was maintained in all material respects. Our audit of internal control over financial reporting included obtaining an understanding of internal control over financial reporting, assessing the risk that a material weakness exists, and testing and evaluating the design and operating effectiveness of internal control based on the assessed risk. Our audit also included performing such other procedures as we considered necessary in the circumstances. We believe that our audit provides a reasonable basis for our opinion.

A company's internal control over financial reporting is a process designed to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles. A company's internal control over financial reporting includes those policies and procedures that (1) pertain to the maintenance of records that, in reasonable detail, accurately and fairly reflect the transactions and dispositions of the assets of the company; (2) provide reasonable assurance that transactions are recorded as necessary to permit preparation of financial statements in accordance with generally accepted accounting principles, and that receipts and expenditures of the company are being made only in accordance with authorizations of management and directors of the company; and (3) provide reasonable assurance regarding prevention or timely detection of unauthorized acquisition, use, or disposition of the company's assets that could have a material effect on the financial statements.

Because of its inherent limitations, internal control over financial reporting may not prevent or detect misstatements. Also, projections of any evaluation of effectiveness to future periods are subject to the risk that controls may become inadequate because of changes in conditions, or that the degree of compliance with the policies or procedures may deteriorate.

In our opinion, Actinium Pharmaceutical, Inc. maintained, in all material respects, effective internal control over financial reporting as of December 31, 2014, based on criteria established in *Internal Control—Integrated Framework (2013)* issued by the Committee of Sponsoring Organizations of the Treadway Commission (COSO).

We have also audited, in accordance with the standards of the Public Company Accounting Oversight Board (United States), the consolidated balance sheets and the related consolidated statements of operations, stockholders' deficit, and cash flows of Actinium Pharmaceutical, Inc., and our report dated March 16, 2015, expressed an unqualified opinion.

/s/ GBH CPAs, PC

GBH CPAs, PC  
[www.gbhcpas.com](http://www.gbhcpas.com)  
Houston, Texas  
March 16, 2015

REPORT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM  
ON CONSOLIDATED FINANCIAL STATEMENTS

To the Board of Directors and Stockholders of  
Actinium Pharmaceuticals, Inc.  
New York, NY

We have audited the accompanying consolidated balance sheets of Actinium Pharmaceuticals, Inc. (the “Company”) as of December 31, 2014 and 2013 and the related consolidated statements of operations, changes in stockholders’ deficit, and cash flows for the years ended December 31, 2014 and 2013. Actinium Pharmaceuticals, Inc.’s management is responsible for these financial statements. Our responsibility is to express an opinion on these financial statements based on our audits.

We conducted our audits in accordance with the standards of the Public Company Accounting Oversight Board (United States). Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the financial statements are free of material misstatement. An audit includes examining, on a test basis, evidence supporting the amounts and disclosures in the financial statements. An audit also includes assessing the accounting principles used and significant estimates made by management, as well as evaluating the overall financial statement presentation. We believe that our audits provide a reasonable basis for our opinion.

In our opinion, the consolidated financial statements referred to above present fairly, in all material respects, the financial position of Actinium Pharmaceuticals, Inc. as of December 31, 2014 and 2013 and the results of its operations and its cash flows for the years ended December 31, 2014 and 2013 in conformity with accounting principles generally accepted in the United States of America.

We also have audited, in accordance with the standards of the Public Company Accounting Oversight Board (United States), Actinium Pharmaceutical Inc.’s internal control over financial reporting as of December 31, 2014, based on criteria established in *Internal Control—Integrated Framework (2013)* issued by the Committee of Sponsoring Organizations of the Treadway Commission (COSO), and our report dated March 16, 2015, expressed an unqualified opinion.

/s/ GBH CPAs, PC

GBH CPAs, PC  
[www.gbhcpas.com](http://www.gbhcpas.com)  
Houston, Texas  
March 16, 2015

**Actinium Pharmaceuticals, Inc.**  
**Consolidated Balance Sheets**

	<u>December 31,</u> <u>2014</u>	<u>December 31,</u> <u>2013</u>
<u>Assets</u>		
<b>Current Assets:</b>		
Cash and cash equivalents	\$ 6,706,802	\$ 5,533,366
Prepaid expenses and other current assets	699,851	218,389
<b>Total Current Assets</b>	<u>7,406,653</u>	<u>5,751,755</u>
Property and equipment, net of accumulated depreciation	127,700	13,920
Restricted cash	34,733	-
<b>Total Assets</b>	<u>\$ 7,569,086</u>	<u>\$ 5,765,675</u>
<u>Liabilities and Stockholders' Deficit</u>		
<b>Current Liabilities:</b>		
Accounts payable and accrued expenses	\$ 2,283,796	\$ 378,955
Accounts payable and accrued expenses - related parties	214,357	81,185
Notes payable	283,552	157,825
Derivative liabilities	6,709,911	6,707,255
<b>Total Current Liabilities</b>	<u>9,491,616</u>	<u>7,325,220</u>
<b>Total Liabilities</b>	<u>9,491,616</u>	<u>7,325,220</u>
<b>Commitments and contingencies</b>		
<b>Stockholders' Deficit:</b>		
Preferred stock, \$0.001 par value; 50,000,000 authorized, 0 shares issued and outstanding	-	-
Common stock, \$0.001 par value; 200,000,000 shares authorized; 29,971,839 and 24,565,447 shares issued and outstanding, respectively	29,972	24,565
Additional paid-in capital	89,252,262	64,933,145
Accumulated deficit	(91,204,764)	(66,517,255)
<b>Total Stockholders' Deficit</b>	<u>(1,922,530)</u>	<u>(1,559,545)</u>
<b>Total Liabilities and Stockholders' Deficit</b>	<u>\$ 7,569,086</u>	<u>\$ 5,765,675</u>

See accompanying notes to consolidated financial statements.

**Actinium Pharmaceuticals, Inc.**  
**Consolidated Statements of Operations**

	<b>For the Year ended December 31,</b>	
	<b>2014</b>	<b>2013</b>
<b>Revenue</b>	\$ -	\$ -
<b>Operating expenses:</b>		
Research and development	12,267,313	3,109,331
General and administrative	10,175,323	3,476,879
Depreciation and amortization expense	37,908	1,560
Loss on disposition of equipment	-	4,122
<b>Total operating expenses</b>	<b>22,480,544</b>	<b>6,591,892</b>
<b>Loss from operations</b>	<b>(22,480,544)</b>	<b>(6,591,892)</b>
<b>Other expense:</b>		
Interest expense	(866)	(2,508)
Loss on change in fair value - derivative liabilities	(2,206,099)	(4,179,392)
<b>Total other expense</b>	<b>(2,206,965)</b>	<b>(4,181,900)</b>
<b>Net loss</b>	<b>\$ (24,687,509)</b>	<b>\$ (10,773,792)</b>
<b>Net loss per common share - basic and diluted</b>	<b>\$ (0.90)</b>	<b>\$ (0.47)</b>
<b>Weighted average number of common shares outstanding - basic and diluted</b>	<b>27,363,748</b>	<b>22,752,752</b>

See accompanying notes to consolidated financial statements.

**Actinium Pharmaceuticals, Inc.**  
**Consolidated Statement of Changes in Stockholders' Deficit**  
**For the Years Ended December 31, 2014 and 2013**

	<u>Common Stock</u>		<u>Additional Paid-In Capital</u>	<u>Accumulated Deficit</u>	<u>Total Stockholders' Deficit</u>
	<u>Shares</u>	<u>Amount</u>			
<b>Balance, December 31, 2012</b>	<b>21,391,665</b>	<b>\$ 21,392</b>	<b>\$ 56,867,706</b>	<b>\$ (55,743,463)</b>	<b>\$ 1,145,635</b>
Stock-based compensation	265,834	265	657,547	-	657,812
Proceeds from the sale of common stock	554,310	554	2,882,703	-	2,883,257
Issuance of common stock from exercise of options	16,650	17	13,036	-	13,053
Issuance of common stock from exercise of warrants	2,336,988	2,337	3,465,058	-	3,467,395
Transfer of warrant derivatives from liability to equity classification	-	-	1,047,095	-	1,047,095
Net loss	-	-	-	(10,773,792)	(10,773,792)
<b>Balance, December 31, 2013</b>	<b>24,565,447</b>	<b>24,565</b>	<b>64,933,145</b>	<b>(66,517,255)</b>	<b>(1,559,545)</b>
Stock-based compensation	379,901	381	6,280,248	-	6,280,629
Proceeds from the sale of common stock, net of offering costs	2,379,433	2,380	15,432,925	-	15,435,305
Issuance of common stock from exercise of options	310,400	310	274,843	-	275,153
Issuance of common stock from exercise of warrants	2,336,658	2,336	157,658	-	159,994
Direct costs incurred before shares are issued	-	-	(30,000)	-	(30,000)
Transfer of warrant derivatives from liability to equity classification	-	-	2,203,443	-	2,203,443
Net loss	-	-	-	(24,687,509)	(24,687,509)
<b>Balance, December 31, 2014</b>	<b>29,971,839</b>	<b>\$ 29,972</b>	<b>\$ 89,252,262</b>	<b>\$ (91,204,764)</b>	<b>\$ (1,922,530)</b>

See accompanying notes to consolidated financial statements.

**Actinium Pharmaceuticals, Inc.**  
**Consolidated Statements of Cash Flows**

	<b>For the Year Ended</b>	
	<b>December 31,</b>	
	<b>2014</b>	<b>2013</b>
<b>Cash Flows From Operating Activities:</b>		
Net loss	\$ (24,687,509)	\$ (10,773,792)
Adjustments to reconcile net loss to net cash used in operating activities:		
Stock-based compensation	6,280,629	657,812
Depreciation expense	37,908	1,560
Loss on disposition of equipment	-	4,122
Change in fair value of derivative liabilities	2,206,099	4,179,392
Changes in operating assets and liabilities:		
(Increase) decrease in:		
Prepaid expenses and other current assets	(193,894)	106,579
Increase (decrease) in:		
Accounts payable and accrued liabilities	1,874,841	(518,089)
Accounts payable and accrued liabilities - related parties	133,172	50,000
<b>Net Cash Used In Operating Activities</b>	<b>(14,348,754)</b>	<b>(6,292,416)</b>
<b>Cash Flows From Investing Activities:</b>		
Restricted cash	(34,733)	-
Purchase of property and equipment	(151,688)	(16,592)
<b>Net Cash Used In Investing Activities</b>	<b>(186,421)</b>	<b>(16,592)</b>
<b>Cash Flows From Financing Activities:</b>		
Payments on note payable	(161,841)	(140,000)
Sales of common stock, net of offering costs	15,435,305	2,883,257
Proceeds from exercise of options and warrants	435,147	3,480,448
<b>Net Cash Provided By Financing Activities</b>	<b>15,708,611</b>	<b>6,223,705</b>
<b>Net change in cash</b>	<b>1,173,436</b>	<b>(85,303)</b>
Cash at beginning of period	5,533,366	5,618,669
<b>Cash at end of period</b>	<b>\$ 6,706,802</b>	<b>\$ 5,533,366</b>
<b>Supplemental disclosures of cash flow information:</b>		
Cash paid for interest	\$ 866	\$ 561
Cash paid for income tax	\$ -	\$ -
<b>Supplemental disclosure of non-cash investing and financing activities:</b>		
Stock issuance costs accrued in accounts payable and accrued expenses	\$ 30,000	\$ -
Insurance financed through premium finance agreements	\$ 287,568	\$ 157,825
Transfer of warrant derivatives from liability to equity classification	\$ 2,203,443	\$ 1,047,095

See accompanying notes to consolidated financial statements.

**Actinium Pharmaceuticals, Inc.**  
**Notes to Consolidated Financial Statements**

**Note 1 – Description of Business and Summary of Significant Accounting Policies**

**Nature of Business** – Actinium Pharmaceuticals, Inc. (the “Company” or “Actinium”) is a biotechnology company committed to developing breakthrough therapies for life threatening diseases using its alpha particle immunotherapy (APIT) platform and other related and similar technologies. Actinium, together with its wholly owned subsidiary, MedActinium, Inc. (MAI), (hereinafter referred to collectively as “Actinium”) initiated collaborative efforts with large institutions to establish the proof of concept of APIT and has supported one Phase 1/2 clinical trial and one Phase 1 clinical trial at Memorial Sloan-Kettering Cancer Center (“MSKCC”) under an MSKCC Physician IND Application. In 2012, Actinium launched a multi-center corporate sponsored trial in acute myeloid leukemia (AML) patients. Actinium’s objective, through research and development, is to produce reliable cancer fighting products which utilize monoclonal antibodies linked with alpha particle emitters or other appropriate payloads to provide very potent targeted therapies. The initial clinical trials of Actinium’s compounds have been with patients having acute myeloid leukemia and it is believed that Actinium’s APIT platform will have wider applicability for different types of cancer where suitable monoclonal antibodies can be found.

On December 28, 2012, the Company entered into a transaction (the “Share Exchange”), pursuant to which the Company acquired 100% of the issued and outstanding equity securities of Actinium Pharmaceuticals, Inc. (“API”), in exchange for the issuance of approximately 99% of the issued and outstanding common stock, par value \$0.01 per share, of the Company. As a result of the Share Exchange, the Company was then considered a holding company operating through API, a clinical-stage biopharmaceutical company developing certain cancer treatments.

On March 20, 2013, the Company’s subsidiary, Actinium Pharmaceuticals, Inc., changed its name to Actinium Corporation. On April 11, 2013, the Company changed its domicile from the State of Nevada to the State of Delaware and changed its name from Cactus Ventures, Inc. to Actinium Pharmaceuticals, Inc.

On September 25, 2013, in accordance with a Certificate of Ownership Merging Actinium Corporation into the Actinium Pharmaceuticals, Inc. filed in Delaware, the Company merged (the “Merger”) into itself Actinium Corporation (a 93.7% owned subsidiary), and Actinium Corporation ceased to exist. As a result of the Merger, Actinium Corporation stock owned by the Company was cancelled and each share of Actinium Corporation not owned by the Company was exchanged for 0.333 shares of Company’s common stock. A total of 3,970,137 shares of Actinium Corporation common stock was exchanged for 1,322,055 shares of Company common stock.

**Principles of Consolidation** – The consolidated financial statements include the Company’s accounts and those of the Company’s wholly owned subsidiaries. All significant intercompany accounts and transactions have been eliminated.

**Use of Estimates in Financial Statement Presentation** – The preparation of these consolidated financial statements in conformity with accounting principles generally accepted in the United States of America requires management to make estimates and assumptions that affect the reported amounts of assets and liabilities at the date of the consolidated financial statements and the reported amounts of revenues and expenses during the reporting period. Actual results could differ from those estimates.

**Reclassification** – Certain prior period amounts have been reclassified to conform to current period presentation.

**Cash and Cash Equivalents** – The Company considers all highly liquid accounts with original maturities of three months or less to be cash equivalents. Balances held by the Company are typically in excess of FDIC insured limits. At December 31, 2014 and 2013, all of the Company’s cash was deposited in one bank.

**Property and Equipment** – Machinery and equipment are recorded at cost and depreciated on a straight-line basis over estimated useful lives of three years. Furniture and fixtures are recorded at cost and depreciated on a straight-line basis over estimated useful lives of three years. When assets are retired or sold, the cost and related accumulated depreciation are removed from the accounts, and any related gain or loss is reflected in operations. Repairs and maintenance expenditures are charged to operations.

**Impairment of Long-Lived Assets** – Management reviews long-lived assets for impairment whenever events or changes in circumstances indicate that the carrying amount may not be realizable or at a minimum annually during the fourth quarter of the year. If an evaluation is required, the estimated future undiscounted cash flows associated with the asset are compared to the asset’s carrying value to determine if an impairment of such asset is necessary. The effect of any impairment would be to expense the difference between the fair value of such asset and its carrying value.

**Derivatives** – All derivatives are recorded at fair value on the balance sheet. Fair values for securities traded in the open market and derivatives are based on quoted market prices. Where market prices are not readily available, fair values are determined using market based pricing models incorporating readily observable market data and requiring judgment and estimates.

**Fair Value of Financial Instruments** – Fair value is defined as the price that would be received to sell an asset, or paid to transfer a liability, in an orderly transaction between market participants. A fair value hierarchy has been established for valuation inputs that gives the highest priority to quoted prices in active markets for identical assets or liabilities and the lowest priority to unobservable inputs. The fair value hierarchy is as follows:

Level 1 Inputs – Unadjusted quoted prices in active markets for identical assets or liabilities that the reporting entity has the ability to access at the measurement date.

Level 2 Inputs – Inputs other than quoted prices included in Level 1 that are observable for the asset or liability, either directly or indirectly. These might include quoted prices for similar assets or liabilities in active markets, quoted prices for identical or similar assets or liabilities in markets that are not active, inputs other than quoted prices that are observable for the asset or liability (such as interest rates, volatilities, prepayment speeds, credit risks, etc.) or inputs that are derived principally from or corroborated by market data by correlation or other means.

Level 3 Inputs – Unobservable inputs for determining the fair values of assets or liabilities that reflect an entity's own assumptions about the assumptions that market participants would use in pricing the assets or liabilities.

The following tables set forth assets and liabilities measured at fair value on a recurring and non-recurring basis by level within the fair value hierarchy as of December 31, 2014 and 2013. As required by ASC 820 “*Fair Value Measurements and Disclosures*”, financial assets and liabilities are classified in their entirety based on the lowest level of input that is significant to the fair value measurement. The Company’s assessment of the significance of a particular input to the fair value measurement requires judgment, and may affect the valuation of fair value assets and liabilities and their placement within the fair value hierarchy levels.

	<u>Level 1</u>	<u>Level 2</u>	<u>Level 3</u>	<u>Total</u>
Derivative liabilities:				
At December 31, 2014	-	-	\$ 6,709,911	\$ 6,709,911
At December 31, 2013	-	-	6,707,255	6,707,255

**Income Taxes** – The Company uses the asset and liability method in accounting for income taxes. Under this method, deferred tax assets and liabilities are determined based on differences between financial reporting and income tax carrying amounts of assets and liabilities and are measured using the enacted tax rates and laws that will be in effect when the differences are expected to reverse. The Company reviews deferred tax assets for a valuation allowance based upon whether it is more likely than not that the deferred tax asset will be fully realized. A valuation allowance, if necessary, is provided against deferred tax assets, based upon management’s assessment as to their realization.

**Research and Development Costs** – Research and development costs are expensed as incurred. Research and development reimbursements and grants are recorded by the Company as a reduction of research and development costs. For the years ended December 31, 2014, and 2013, the Company incurred \$12,267,313 and \$3,109,331 of research and development costs, respectively.

**Share-Based Payments** – The Company estimates the fair value of each stock option award at the grant date by using the Black-Scholes option pricing model. The fair value determined represents the cost for the award and is recognized over the vesting period during which an employee is required to provide service in exchange for the award. As share-based compensation expense is recognized based on awards ultimately expected to vest, the Company reduces the expense for estimated forfeitures based on historical forfeiture rates. Previously recognized compensation costs may be adjusted to reflect the actual forfeiture rate for the entire award at the end of the vesting period. Excess tax benefits, if any, are recognized as an addition to paid-in capital.

**Earnings (Loss) Per Common Share** – The Company calculates net loss per common share in accordance with ASC 260 “Earnings Per Share” (“ASC 260”). Basic and diluted net loss per common share was determined by dividing net loss applicable to common stockholders by the weighted average number of shares of common stock outstanding during the period. The Company’s potentially dilutive shares, which include outstanding common stock options and warrants have not been included in the computation of diluted net loss per share for all periods as the result would be anti-dilutive.

	December 31, 2014	December 31, 2013
Options	3,013,084	1,985,384
Warrants	7,634,058	9,673,290
<b>Total</b>	<b>10,647,142</b>	<b>11,658,674</b>

**Recent Accounting Pronouncements** – In June 2014, the Financial Accounting Standards Board issued Accounting Standards Update 2014-10, Development Stage Entities. The amendments in this Update remove the definition of a development stage entity from Topic 915, thereby removing the distinction between development stage entities and other reporting entities from U.S. GAAP. In addition, the amendments eliminate the requirements for development stage entities to (1) present inception-to-date information on the statements of income, cash flows, and shareholder’s equity, (2) label the financial statements as those of a development stage entity, (3) disclose a description of the development stage activities in which the entity is engaged, and (4) disclose in the first year in which the entity is no longer a development stage entity that in prior years it had been in the development stage. The amendments also clarify that the guidance in Topic 275, Risks and Uncertainties, is applicable to entities that have not commenced planned principal operations. Finally, the amendments also remove paragraph 810-10-15-16, which states that a development stage entity does not meet the condition in paragraph 810-10-15-14(a) to be a variable interest entity (VIE) if (1) the entity can demonstrate that the equity invested in the legal entity is sufficient to permit it to finance the activities it is currently engaged in and (2) the entity’s governing documents and contractual arrangements allow additional equity investments. Under the amendments, all entities within the scope of the Variable Interest Entities Subsections of Subtopic 810-10, Consolidation—Overall, would be required to evaluate whether the total equity investment at risk is sufficient using the guidance provided in paragraphs 810-10-25-45 through 25-47, which requires both qualitative and quantitative evaluations. The amendments in this Update are effective for annual reporting periods beginning after December 15, 2014, and interim periods therein, and early adoption is required. The Company evaluated and adopted ASU 2014-10 at June 30, 2014.

In June 2014, the Financial Accounting Standards Board issued Accounting Standards Update 2014-12, Compensation- Stock Compensation. The amendments in this update apply to reporting entities that grant their employees share-based payments in which the terms of the award provide that a performance target can be achieved after the requisite service period. The amendments in this Update are effective for annual periods and interim periods within those annual periods beginning after December 15, 2015, and early adoption is permitted. The Company is currently evaluating the effects of ASU 2014-12 on the consolidated financial statements.

In August 2014, the Financial Accounting Standards Board issued Accounting Standards Update 2014-15, Presentation of Financial Statements - Going Concern. The Update provides U.S. GAAP guidance on management’s responsibility in evaluating whether there is substantial doubt about a company’s ability to continue as a going concern and about related footnote disclosures. For each reporting period, management will be required to evaluate whether there are conditions or events that raise substantial doubt about a company’s ability to continue as a going concern within one year from the date the financial statements are issued. The amendments in this Update are effective for the annual period ending after December 15, 2016, and for annual periods and interim periods thereafter. The Company is currently evaluating the effects of ASU 2014-15 on the consolidated financial statements.

**Subsequent Events** – The Company’s management reviewed all material events through the date of the consolidated financial statements were issued for subsequent event disclosure consideration. See Note 10.

**Note 2 – Related Party Transactions**

**MSKCC:**

On February 11, 2002, the Company entered into a License, Development and Commercialization Agreement with Sloan-Kettering Institute of Cancer Research (“SKI”), an entity related to Memorial Sloan Kettering Cancer Center (“MSKCC”), a majority shareholder of the Company. The agreement was amended in August 2006. Pursuant to the agreement, the Company licensed certain intellectual property from SKI, including critical patents with respect to the Company’s core technology that also supports ongoing research and clinical development of related drug candidates. MSKCC agreed, subject to certain conditions, to utilize the funds paid for certain clinical and preclinical programs and activities related to the Company’s drug development and clinical study programs, including the payment of certain costs and expenses that would otherwise have been borne by the Company.

The Company is obligated to make the following milestone payments:

Milestones	Payments
(1) filing of an New Drug Application (“NDA”) or regulatory approval for each licensed product	\$ 750,000
(2) upon the receipt of regulatory approval from the U.S. FDA for each licensed product	1,750,000

Under the agreement, the Company shall pay to MSKCC on a country-by-country basis a royalty of 2% of net sales of all licensed products until the later of: (1) 10 years from the first commercial sale, or (2) when the patents expire.

On September 4, 2013, the Company entered into a letter agreement with SKI to set forth the amount that the Company owes SKI for the period from 2011 to 2014 under the License Agreement. The total amount that the Company owes SKI for the period from 2011 to 2014 is \$815,100 plus all relevant licensed intellectual property related pass through costs to be determined. The amount owed does not include amounts the Company may owe for patent expenses under the License Agreement. For the years ended December 31, 2014 and 2013, the annual maintenance fee was \$184,556 and \$232,730 plus third party costs incurred.

On March 27, 2012, the Company entered into an additional clinical trial agreement with MSKCC Cancer Center with respect to conducting a Phase 1/2 trial of combination therapy of low dose cytarabine and fractionated dose of Lintuzumab-Ac225. The Company will pay \$31,185 for each patient that has completed the clinical trial. Upon execution of the agreement, the Company paid a start-up fee of \$79,623 in 2012. During the year ended December 31, 2014 and 2013, the Company recorded an expense of \$62,370 and \$0, respectively.

As of December 31, 2014 and 2013, the Company has a payable to MSKCC covering the annual maintenance costs, clinical trials expense and patent costs totaling \$189,537 and \$81,185, respectively.

***Placement Agent:***

On August 7, 2012, the Company entered into an engagement agreement with a Healthcare Investment Bank as its placement agent for the 2012 Common Stock Offering whereby a director of the Company, is the Head of its Healthcare Investment Banking team. Pursuant to the agreement, the placement agent was engaged as the exclusive agent for the 2012 Common Stock Offering. In consideration for its services, the placement agent received (a) a cash fee equal to 10% of the gross proceeds raised in the 2012 Common Stock Offering, (b) a non-accountable expense reimbursement equal to 2% of the gross proceeds raised in the 2012 Common Stock Offering, and (c) reimbursement of \$100,000 for legal expenses incurred by the placement agent. The placement agent or its designees also received warrants to purchase shares of the Company's Common Stock in an amount equal to 10% of the shares of common stock issued as part of the units sold in the 2012 Common Stock Offering and the shares of Common Stock issuable upon exercise of the B warrants included in such units. The placement agent also received the same fee and expense schedule for any cash exercise of warrants within 6 months of the final closing of the 2012 Common Stock Offering and a 5% solicitation fee for any warrants exercised as a result of being called for redemption by the Company. Upon the final closing of the 2012 Common Stock Offering of the units, the placement agent was engaged by the Company to provide certain financial advisory services to the Company for a period of at least 6 months for a monthly fee of \$25,000. The agreement also provides that (i) if the Company consummates any merger, acquisition, business combination or other transaction (other than the Share Exchange) with any party introduced to it by the placement agent, the placement agent would receive a fee equal to 10% of the aggregate consideration in such transactions, and (ii) if, within a period of 12 months after termination of the advisory services described above, the Company requires a financing or similar advisory transaction the placement agent will have the right to act as the Company's financial advisor and investment banker in such financing or transaction pursuant to a set fee schedule set forth in the August 7, 2012 engagement agreement. For a period ending one year after the expiration of all lock-up agreements entered into in connection with the Share Exchange, any change in the size of the Company board of directors must be approved by the placement agent.

On December 9, 2013, the Company entered into another engagement agreement with its placement agent for the 2013 Common Stock Offering, (“the 2013 Offering”). The 2013 Offering was completed in two tranches, December 9, 2013 and January 10, 2014. The agreement entered in on December 9, 2013 had similar terms as the 2012 agreement, including a cash fee equal to 10% of the gross proceeds raised, a non-accountable expense reimbursement equal to 2% of the gross proceeds raised and warrants to purchase shares of the Company’s Common Stock in an amount equal to 10% of the shares of common stock issued or issuable. Subsequent to the closing of the 2013 Offering, the placement agent continued to provide certain financial advisory services to the Company until three months after the Company had up-listed its securities for trading on a U.S. National Exchange for a monthly fee of \$25,000. On May 28, 2014, the Company and the placement agent agreed to terminate the December 9, 2013 engagement agreement. For the year ended December 31, 2014 the Company paid its placement agent \$75,000. As of December 31, 2014, the Company owed its placement agent \$25,000.

For the years ended December 31, 2014 and 2013, the placement agent received a cash fee of \$397,303 and \$399,103, respectively, from the 2013 Offering and was issued warrants to purchase 68,976 and 69,289 shares, respectively, of the Company’s Common Stock at \$9 per share for a period of 5 years.

On July 10, 2014, the Company completed another public offering pursuant to a shelf registration statement previously filed where the placement agent acted as lead manager. The placement received a cash fee of \$455,108.

### Note 3 – Prepaid Expenses and Other Current Assets

Prepaid expenses and other current assets consisted of the following at December 31, 2014 and 2013:

	December 31, 2014	December 31, 2013
Security deposit	\$ 11,350	\$ 5,750
Prepaid insurance	368,223	157,825
Other prepaid expenses	320,278	54,814
	<u>\$ 699,851</u>	<u>\$ 218,389</u>

### Note 4 – Property and Equipment

Property and equipment consisted of the following at December 31, 2014 and 2013:

	Lives	December 31, 2014	December 31, 2013
Lab equipment	3 years	\$ 108,713	\$ -
Office equipment	3 years	58,455	15,480
Less: accumulated depreciation		(39,468)	(1,560)
Property and equipment, net		<u>\$ 127,700</u>	<u>\$ 13,920</u>

Depreciation expense for the years ended December 31, 2014 and 2013 was \$37,908 and \$1,560, respectively. The Company wrote off certain undepreciated property and equipment during the year ended December 31, 2013 and recorded a loss of \$4,122 on the disposition.

## Note 5 – Note Payable

On December 28, 2013, the Company entered into a premium finance agreement for its director and officer liability insurance policy in the amount of \$157,825. Pursuant to the agreement, the Company paid \$15,995 in monthly installments for nine months. During the year ended December 31, 2014, the Company paid \$157,825 on this note.

On October 25, 2014, the Company entered into a premium finance agreement for its multiple commercial insurance policies in the amount of \$43,075. Pursuant to the agreement, the Company is required to pay \$4,882 in monthly installments for nine months. During the year ended December 31, 2014, the Company paid principal and interest of \$4,882 on this note.

On December 28, 2014, the Company entered into a premium finance agreement for its director and officer liability insurance policy in the amount of \$244,493. Pursuant to the agreement, the Company is required to pay \$27,614 in monthly installments for nine months.

As of December 31, 2014 and 2013, the outstanding balance related to the premium finance agreements was \$283,552 and \$157,825, respectively.

## Note 6 – Derivatives

The Company has determined that certain warrants the Company has issued contain provisions that protect holders from future issuances of the Company's common stock at prices below such warrants' respective exercise prices and these provisions could result in modification of the warrants' exercise price based on a variable that is not an input to the fair value of a "fixed-for-fixed" option as defined under FASB ASC Topic No. 815 – 40. The warrants granted in connection with the issuance of the 2012 Common Stock Offering, and the placement agent warrants contain anti-dilution provisions that provide for a reduction in the exercise price of such warrants in the event that future common stock (or securities convertible into or exercisable for common stock) is issued (or becomes contractually issuable) at a price per share (a "Lower Price") that is less than the exercise price of such warrant at the time. The amount of any such adjustment is determined in accordance with the provisions of the warrant agreement and depends upon the number of shares of common stock issued (or deemed issued) at the Lower Price and the extent to which the Lower Price is less than the exercise price of the warrant at the time.

Activities for derivative warrant instruments during the years ended December 31, 2014 and 2013 were as follows:

	Shares subject to warrants	Fair Value
Balance, December 31, 2012	5,146,338	\$ 3,574,958
Transfer from liability to equity classification	(3,177,715)	(1,047,095)
Change in fair value	<u>-</u>	<u>4,179,392</u>
Balance, December 31, 2013	1,968,623	\$ 6,707,255
Transfer from liability to equity classification	(319,294)	(2,203,443)
Change in fair value	<u>-</u>	<u>2,206,099</u>
Balance, December 31, 2014	<u>1,649,329</u>	<u>\$ 6,709,911</u>

During the year ended December 31, 2014, 2,501,993 warrants were exercised, of which 319,294 were derivative warrants. The fair value of these derivative warrants totaling \$2,203,443 were measured on the various exercise dates and reclassified to additional paid-in capital.

During the year ended December 31, 2013, certain derivative warrants expired or were exercised. The fair value of these derivative warrants totaling \$1,047,095 were measured on the expiration or exercise date and reclassified to additional paid-in capital.

The fair values of the derivative warrants were calculated using a modified binomial valuation model with the following assumptions at each balance sheet date.

	December 31, 2014	December 31, 2013
Market value of common stock on measurement date (1)	\$ 5.89	\$ 5.89
Adjusted exercise price	\$ 2.48	\$ 2.48
Risk free interest rate (2)	1.10%	1.27%
Warrant lives in years	3.0 years	0.5 years
Expected volatility (3)	71%	73%
Expected dividend yield (4)	-	-
Probability of stock offering in any period over 5 years (5)	100%	25%
Offering price (6)	\$ 4.50	\$ 9.00

- (1) The market value of common stock at the above measurement dates is based on the Company's trading price quoted on the OTC Markets for December 31, 2013 and on the NYSE MKT for December 31, 2014.
- (2) The risk-free interest rate was determined by management using the Treasury Bill rate as of the respective measurement date.
- (3) Because the Company does not have adequate trading history to determine its historical trading volatility, the volatility factor was estimated by management using the historical volatilities of comparable companies in the same industry and region.
- (4) Management determined the dividend yield to be 0% based upon its expectation that it will not pay dividends for the foreseeable future.
- (5) Management determines the probability of future stock offering at each evaluation date.
- (6) Represents the estimated offering price in future offerings as determined by management.

#### Note 7 – Commitments and Contingencies

##### License and Research Agreements

The Company has entered into license and research and development agreements with third parties under which the Company is obligated to make upfront payments as well as milestone and royalty payments. Notable inclusions in this category are:

- a. AbbVie Biotherapeutics Corp. (formerly Abbott Biotherapeutics Corp) – The Company entered into a Product Development and Patent License Agreement with AbbVie Biotherapeutics Corp. in 2003 to secure exclusive rights to a specific antibody when conjugated with alpha emitting radioisotopes. Upon execution of the agreement, the Company made a license fee payment of \$3,000,000.

The Company agreed to make milestone payments totaling \$7,750,000 for the achievement of the following agreed to and contracted milestones:

Milestones	Payments
(1) when Company initiates a Phase I Clinical Trial of a licensed product	\$ 750,000
(2) when Company initiates a Phase II Clinical Trial of a licensed product	750,000
(3) when Company initiates a Phase III Clinical Trial of a licensed product	1,500,000
(4) Biological License Application filing with U.S. FDA	1,750,000
(5) First commercial sale	1,500,000
(6) after the first \$10,000,000 in net sales	1,500,000

Under the agreement, the Company shall pay to AbbVie Biotherapeutics Corp. on a country-by-country basis a royalty of 12% of net sales of all licensed products until the later of: (1) 12.5 years after the first commercial sale, or (2) when the patents expire.

The Company met its first milestone in 2012 and upon reaching the milestone the Company paid AbbVie Biotherapeutics Corp. a milestone payment of \$750,000 on July 24, 2012. The milestone payment for the Phase 1 Clinical Trial was recorded as research and development expense. The Company has not initiated a Phase 2 Clinical Trial and no payment has been made to AbbVie Biotherapeutics Corp. since the July 24, 2012 payment.

- b. Memorial Sloan Kettering Cancer Center (MSKCC) – see Note 2 - Related Party Transactions.
- c. AptivSolutions provides project management services for the study of the drug Ac-225-HuM195 (Actimab-A) used in the Company's Phase 1 and Phase 2 clinical trials. The total project is estimated to cost approximately \$1.9 million and requires a 12.5% down payment of the total estimated project cost. The down payment totaling \$239,000 was paid in 2007 and 2012. On August 6, 2012, October 22, 2012 and May 16, 2013, the agreement was amended to provide for additional services. The total project is estimated at approximately \$2.7 million at December 31, 2014. AptivSolutions bills the Company when services are rendered and the Company records the related expense to research and development costs. For the years ended December 31, 2014 and 2013, the Company incurred expenses of \$388,000, and \$270,000, respectively, related to this agreement.
- d. On June 15, 2012, the Company entered into a license and sponsored research agreement with Fred Hutchinson Cancer Research Center (FHCRC) to build upon previous and ongoing clinical trials, with BC8 (licensed antibody). FHCRC has currently completed Phase 1 and Phase 2 of the clinical trial and the Company intends to start preparation for a pivotal trial leading to an FDA approval. The Company has been granted exclusive rights to the BC8 antibody and related master cell bank developed by FHCRC. The cost to develop the trial will range from \$13.2 million to \$23.5 million, depending on the trial design as required by the FDA. Under the terms of the sponsored research agreement, the Company will fund the FHCRC lab with \$150,000 per year for the first two years and \$250,000 thereafter. Payments made toward funding the lab will be credited toward royalty payments owed to FHCRC in the given year. A milestone payment of \$1 million will be due to FHCRC upon FDA approval of the first drug. Upon commercial sale of the drug, royalty payments of 2% of net sales will be due to FHCRC.

During the years ended December 31, 2014 and 2013, the Company recorded and paid fees of approximately \$222,000 and \$75,000, respectively, related to this agreement.

- e. On August 28, 2012, the Company entered into a clinical trial agreement with The University of Texas M.D. Anderson Cancer Center. The total estimated cost of conducting the clinical trial is approximately \$500,000, which includes a non-refundable institutional fee of \$14,500. The estimated cost is based on treating 24 patients through 2013. Upon execution of the agreement, the Company paid \$33,946. During 2013, there was one patient treated and the Company paid \$34,383 in July 2013. During the year ended December 31, 2014, the Company recorded an expense of approximately \$102,000.

- f. On February 27, 2014, the Company entered into a manufacturing agreement with Goodwin Biotechnology Inc. (“Goodwin”). Goodwin will oversee the current Good Manufacturing Practices (cGMP) production of a monoclonal antibody anticipated to be used in an upcoming phase 3 clinical trial of Iomab-B. Total cost of the agreement is \$3.3 million. The Company paid a non-refundable payment of \$562,790 upon execution of the agreement. Periodic payments will be made upon reaching certain milestones. As of December 31, 2014, the remaining cost of the agreement is approximately \$2.2 million. Goodwin bills the Company when services are rendered and the Company records the related expense to research and development costs. As of December 31, 2014, the Company has \$662,239 payable to Goodwin.
- g. On June 20, 2014, the Company entered into a CRO agreement with Act Oncology. Act Oncology provides project management services for the study of Iomab-B used for the intended Phase 3 clinical trial. The total project is estimated to cost approximately \$0.8 million. During 2014, the Company recorded expenses of approximately \$0.7 million. Act Oncology bills the Company when services are rendered and the Company records the related expense to research and development costs.
- h. On September 30, 2014, the Company entered into a research agreement with the Albert Einstein College of Medicine of Yeshiva University (“Einstein”). According to the agreement, Einstein will use certain materials provided by the Company to complete a research project. The research project will explore the feasibility of using Actinium 225 to prepare patients with blood borne cancers to receive a hematopoietic stem cell transplant. Einstein will periodically provide the Company with reports showing project data or research. The total fixed price of the project is \$183,391 which is payable to Einstein in three payments. A payment of approximately \$92,000 was made in October 2014.

### Lease Agreements

On August 1, 2012, the Company entered into a rental agreement for office space at 501 Fifth Avenue, New York, NY. The agreement was terminated on May 31, 2013. On June 4, 2013 and amended on October 4, 2013, the Company entered into two rental agreements for office space at 546 Fifth Avenue, New York, NY. One of the agreements was terminated on July 6, 2014. The Company plans to maintain office space at 546 Fifth Avenue, New York, NY on a month to month basis. The Company paid a one month refundable deposit on the space that it maintains in New York, NY. On April 22, 2014, the Company entered into a sublease agreement for office space located at 379 Thornall Street, Edison, NJ. This agreement expires on September 30, 2016. The Company issued a letter of credit for \$34,733 to the existing tenant and maintained a \$34,733 certified deposit as collateral for the letter of credit.

Future minimum obligations on the lease are:

For the year ending December 31,	
2015	\$ 109,410
2016	84,011
	<u>193,421</u>

### Note 8 – Equity

On December 9, 2013, the Company entered into an engagement agreement with its placement agent for the 2013 Common Stock Offering, (the “2013 Offering”) The 2013 Offering was completed in two tranches, on December 9, 2013 and January 10, 2014.

On December 27, 2013, the Company completed the first sale of the 2013 Offering pursuant to a Unit Purchase Agreement, with certain accredited investors and pursuant to which: the investors agreed to purchase (i) an aggregate of 554,310 shares (the "Shares") of common stock at \$6.00 per share and (ii) five-year warrants to purchase an aggregate of 138,577 shares of common stock at an exercise price of \$9.00 per share. The Company received \$3,325,860 in gross proceeds from the sale of securities and \$2,883,257 net proceeds after deducting the underwriting discount and the other offering expenses. The transaction date fair value of the warrants of \$0.4 million was determined utilizing the Black-Scholes option pricing model utilizing the following assumptions: risk free interest rate – 0.07%, expected volatility – 84.06%, expected dividend yield - 0%, and a contractual life of 5 years.

In January 2014, the Company completed the final tranche of the 2013 Offering and received approximately \$3.3 million total gross proceeds from accredited investors ("2014 Closing"). The Company paid its placement agent total cash fees of approximately \$395,000 and paid attorney fees of \$40,000 for their services resulting in net proceeds of \$2,873,557. In the 2014 Closing, the Company sold 551,810 shares of common stock at \$6.00 per share and granted 137,952 units of five-year warrants with an exercise price of \$9.00 per share. The warrants are exercisable for a period of five years from the date of issuance. The transaction date fair value of the warrants of \$0.6 million was determined utilizing the Black-Scholes option pricing model utilizing the following assumptions: risk free interest rate - 1.64%, expected volatility - 88%, expected dividend yield - 0%, and a contractual life of 5 years.

On March 24, 2014, the Company filed a shelf registration statement on Form S-3 (the "Registration Statement") which was effective on April 17, 2014. This Registration Statement contained two prospectuses: (i) a base prospectus which covers the offering, issuance and sale by the Company of up to \$200,000,000 of its common stock, preferred stock, warrants and/or units; and (ii) a sales agreement prospectus covering the offering, issuance and sale by us of up to a maximum aggregate offering price of \$75,000,000 of its common stock that may be issued and sold under a sales agreement (the "Sales Agreement") with MLV & Co. LLC ("MLV") dated March 24, 2014. The Company will pay MLV in cash, upon the sale of common stock pursuant to the Sales Agreement, an amount equal to 3.0% of the gross proceeds from the sale of common stock. On April 28, 2014, the Company issued 500 shares and received net proceeds of \$6,000 under the Sales Agreement with MLV.

During January 2014, in connection with the Offering, the Company issued the Placement Agent warrants to purchase an aggregate of 68,976 shares of common stock with an exercise price of \$9.00 per share. The transaction date fair value of the warrants of \$0.3 million was determined utilizing the Black-Scholes option pricing model utilizing the following assumptions: risk free interest rate – 1.64%, expected volatility - 88%, expected dividend yield - 0%, and a contractual life of 5 years.

On June 30, 2014, the Company received gross proceeds of \$12,525,000 from a public offering of 1,670,000 shares of the Company's common stock, \$0.001 par value per share at a price to the public of \$7.50 per share less underwriting discounts. The Company paid an underwriting discount of \$876,750, paid the other offering expenses of \$125,000, and paid attorney and auditor fees of \$72,000 resulting in net proceeds of \$11,451,250. Under the terms of the underwriting agreement, the Company also granted the underwriters a 30-day option to purchase up to an additional 250,000 shares of common stock to cover over-allotments, if any, at the offering price.

On July 10, 2014, the underwriter exercised their over-allotment option to purchase an additional 157,123 shares from the Company for \$7.50 per share. Including the exercise of the over-allotment option of \$1.2 million, in gross proceeds, the Company's June offering totaled 1,827,123 shares, representing gross proceeds of approximately \$13.7 million and approximately \$12,555,748 net after deducting the underwriting discount and the other offering expenses.

#### **Approval of the 2013 Stock Plan**

In September 2013, the Board approved the Company's 2013 Stock Plan. The expiration date of the plan is September 9, 2023 and the total number of underlying shares of the Company's common stock available for grant to employees, directors and consultants of the Company under the plan is 2,750,000 shares. In December 2013, the shareholders of the Company approved the plan and increased the number of shares authorized under the plan to 5,750,000 shares.

#### **Approval of the Equity Incentive Plan**

In September 2013, the Board approved the Company's 2013 Equity Incentive Plan. The expiration date of the plan is September 9, 2023 and the total number of shares of the Company's common stock available for grant to employees, directors and consultants of the Company under the plan is 450,000 shares. In December 2013, the shareholders of the Company approved the plan and increased the number of shares authorized under the plan to 1,000,000 shares.

#### **Restricted Stock**

During 2013, the Company granted employees, consultants and board members 312,500 shares of restricted stock. 80,000 shares of restricted stock vest 1 year from the grant date, 100,000 shares have a vesting period of 24 months. The remaining restricted shares granted are performance based and vest over time. The shares granted during the year ended December 31, 2013 were valued at \$678,000 based on the stock price on the grant dates.

During the year ended December 31, 2014, the Company granted 633,041 shares of restricted stock and cancelled 50,000 shares of restricted stock. Of the total shares of restricted stock granted, 20,000 shares vest 3 months from the grant date, 30,374 shares vest 1 year from the grant date, 30,000 shares have a vesting period of 2 years, 202,497 shares have a vesting period of 4 years and 350,000 shares vest at the date of grant. The shares granted during the year ended December 31, 2014 were valued at \$4,827,516 based on the stock price on the grant dates. As of December 31, 2014, 202,723 shares related to the restricted stock granted previously have not been issued.



## Stock Options

Following is a summary of option activities for the year ended December 31, 2014 and 2013:

	Number of Units	Weighted Average Exercise Price	Weighted Average Remaining Contractual Term (in years)	Aggregate Intrinsic Value
Outstanding, December 31, 2012	2,330,134	\$ 0.96	8.91	\$ 685,800
Granted	787,450	6.62	10.00	-
Cancelled	(1,115,550)	-	-	-
Exercised	(16,650)	0.78	-	-
Outstanding, December 31, 2013	1,985,384	3.23	8.34	5,908,696
Issued	1,338,100	8.86	10.00	-
Exercised	(310,400)	0.95	-	-
Outstanding, December 31, 2014	<u>3,013,084</u>	5.98	8.35	4,728,842
Exercisable, December 31, 2014	<u>714,447</u>	\$ 1.20	6.20	\$ 3,357,044

During 2013, the Company granted employees and board members 787,450 options to purchase the Company's common stock with exercise prices ranging from \$3.60 to \$6.70, a term of 10 years and vesting over a 4-year period. The fair value of \$3.7 million was calculated using the Black-Scholes option-pricing model. Variables used in the Black-Scholes option-pricing model include: (1) discount rate of 1.36% - 1.55% (2) expected life of 6 years, (3) expected volatility of 83.32% - 98.45%, and (4) zero expected dividends

During the year ended December 31, 2013, the Company received gross proceeds of \$13,053 for exercise of options for 16,650 shares of the Company's common stock.

During the year ended December 31, 2014, the Company granted employees, consultants, and its board members 1,338,100 options to purchase the Company's common stock with exercise prices ranging from \$0.78 to \$11.95 and a term of 10 years with vesting over a 4-year period. The options have an aggregated fair value of \$8.7 million that was calculated using the Black-Scholes option-pricing model. Variables used in the Black-Scholes option-pricing model include: (1) discount rate of 1.77% - 2.07% (2) expected life of 6 years, (3) expected volatility of 82.47% - 87.76%, and (4) zero expected dividends.

During the year ended December 31, 2014, the Company received gross proceeds of \$275,153 for exercise of options for 310,400 shares of the Company's common stock.

All options issued and outstanding are being amortized over their respective vesting periods. The unrecognized compensation expense at December 31, 2014 and 2013 was \$10,213,905 and \$3,999,368, respectively. During the years ended December 31, 2014 and 2013, the Company recorded option expense of \$2.4 million and \$0.3 million, respectively.

## Warrants

Following is a summary of warrant activities for the year ended December 31, 2014 and 2013:

	Number of Units	Weighted Average Exercise Price	Weighted Average Remaining Contractual Term (in years)	Aggregate Intrinsic Value
Outstanding, December 31, 2012	12,770,637	\$ 0.97	4.48	\$ 6,114,768
Granted	329,866	7.47	6.40	-
Exercised	(2,403,429)	1.58	-	-
Forfeited	(1,023,784)	-	-	-
Outstanding, December 31, 2013	9,673,290	\$ 1.06	4.89	\$ 47,396,307
Granted	491,928	8.33	7.90	-
Exercised	(2,501,993)	0.67	-	-
Forfeited	(29,167)	6.70	-	-
Outstanding, December 31, 2014	<u>7,634,058</u>	1.64	3.97	34,317,224
Exercisable, December 31, 2014	<u>7,349,058</u>	\$ 1.40	3.76	\$ 34,283,224

During the year ended December 31, 2013, warrants to purchase 122,000 shares of common stock were granted to service providers at exercise prices ranging from \$3.60 to \$6.70 per share. These warrants have a term of 7 to 10 years and include (1) Warrants to purchase 72,000 shares of common stock vested immediately and were valued at \$177,313 on the grant date; and (2) Warrants to purchase 50,000 shares of common stock vest over a year and were valued at \$235,737 on the grant date. The fair value on the grant date was calculated using the Black-Scholes option-pricing model. Variables used in the Black-Scholes option-pricing model include (1) discount rate of 1.36% - 1.55%, (2) expected term of 5 years, (3) expected volatility of 91.56%, and (4) zero expected dividends. As of December 31, 2013, unrecognized compensation expense related to the warrants was \$226,049.

During the year ended December 31, 2013, the Company also issued warrants to purchase 138,577 shares of the Company's common stock to investors and warrants to purchase 69,289 shares of the Company's common stock to its placement agent in connection with the 2013 Common Stock Offering.

During the year ended December 31, 2013, 2,403,429 warrants were exercised by the warrant holders. The Company issued 2,336,988 shares of common stock and received gross proceeds of approximately \$3.5 million.

During the year ended December 31, 2014, the Company granted warrants to purchase 137,952 shares of the Company's common stock to investors and warrants to purchase 68,976 shares of the Company's common stock to its placement agent in connection with the January 2014 Closing.

During the year ended December 31, 2014, the Company also granted three consultants warrants to purchase 285,000 shares of the Company's common stock with exercise prices ranging from \$5.55 to \$11.66 per share and a term of 10 years. These warrants vest when certain milestones are met. The fair value of the warrants was \$2.1 million on the grant date and was calculated using the Black-Scholes option-pricing model. Variables used in the Black-Scholes option-pricing model include (1) discount rate of 1.56% - 1.66%, (2) expected term of 5 years, (3) expected volatility of 82.47-87.76%, and (4) zero expected dividends. As of December 31, 2014, unrecognized compensation expense related to the warrants was \$1,495,128.

During the year ended December 31, 2014, 2,501,993 warrants were exercised by the warrant holders. The Company issued 2,336,658 shares of common stock and received gross proceeds of \$159,994.

During the year ended December 31, 2014 and 2013, the Company recorded stock-based compensation related to the warrants of \$0.1 million and \$0.2 million, respectively.

#### Note 9 – Income Taxes

Deferred income taxes reflect the net tax effects of temporary differences between the carrying amounts of assets and liabilities for financial reporting purposes and the amounts used for income tax purposes. Significant components of the Company's deferred tax assets and liabilities at December 31, 2014 and 2013 are as follows:

	<u>2014</u>	<u>2013</u>
Deferred tax assets:		
Net operating losses	\$ 22,866,340	\$ 17,884,298
Less: valuation allowance	<u>(22,866,340)</u>	<u>(17,884,298)</u>
Deferred tax assets, net	<u>\$ -</u>	<u>\$ -</u>

As of December 31, 2014, for U.S. federal income tax reporting purposes, the Company has approximately \$67.0 million of unused net operating losses ("NOLs") available for carry forward to future years. The benefit from the carry forward of such NOLs will begin expiring during the year ended December 31, 2021. Because United States tax laws limit the time during which NOL carry forwards may be applied against future taxable income, the Company may be unable to take full advantage of its NOL for federal income tax purposes should the Company generate taxable income. Further, the benefit from utilization of NOLs carry forwards could be subject to limitations due to material ownership changes that could occur in the Company as it continues to raise additional capital. Based on such limitations, the Company has significant NOLs for which realization of tax benefits is uncertain.

The difference between the income tax provision and the amount that would result if the U.S. Federal statutory rate of 34% were applied to pre-tax loss for the years ended December 31, 2014 and 2013 are as follows:

	For the years ended			
	December 31, 2014		December 31, 2013	
Federal income taxes at 34%	\$ (8,393,753)	(34.00)%	\$ (3,663,089)	(34.00)%
Stock-based compensation	2,135,414	8.65%	163,519	1.52%
Change in fair value of derivatives	750,073	3.04%	1,420,993	13.19%
Other	526,224	2.13%	-	-%
Change in valuation allowance	4,982,042	20.18%	2,078,577	19.29%
Provision for income tax	\$ -	-	\$ -	-

#### Note 10 – Subsequent Events

On February 11, 2015, the Company completed an underwritten offering of 4,444,444 shares of its common stock and warrants to purchase an aggregate of 3,333,333 shares of its common stock at a price to the public of \$4.50 per share. The warrants will be exercisable for a period of 4 years at an exercise price of \$6.50 per share. The Company received net proceeds of approximately \$18.5 million, after deducting underwriting discounts and commissions and estimated offering expenses payable by us, and excluding the underwriters' over-allotment option. In addition, the Company granted the underwriters a 30-day option to purchase up to an additional 666,666 shares of common stock and warrants to purchase 499,999 shares of common stock solely to cover over-allotments, if any. The underwriter did not exercise the over-allotment option.

On February 18, 2015, the Company granted employees and its board members 456,000 options to purchase the Company's common stock with exercise price of \$3.58 and a term of 10 years with vesting over a 4-year period. The options have an aggregated fair value of \$1.0 million that was calculated using the Black-Scholes option-pricing model. Variables used in the Black-Scholes option-pricing model include: (1) discount rate of 1.66% (2) expected life of 6 years, (3) expected volatility of 82.47%, and (4) zero expected dividends.

Subsequent to December 31, 2014, the Company issued 891,131 common shares to for cashless exercise of warrants, issued 164,662 shares to consultants in connection with various consulting agreements and issued 10,000 shares to an employee pursuant to an employee agreement.

## ITEM 9. CHANGES IN AND DISAGREEMENTS WITH ACCOUNTANTS ON ACCOUNTING AND FINANCIAL DISCLOSURE.

None.

### ITEM 9A. CONTROLS AND PROCEDURES.

**Disclosure controls and procedures.** The Company, under the supervision and with the participation of its management, including the Company's principal executive officer and principal financial and accounting officer, evaluated the effectiveness of the Company's "disclosure controls and procedures," as such term is defined in Rule 13a-15(e) under the Securities Act of 1934, as amended (the "Exchange Act"), as of the end of the period covered by this Annual Report on Form 10-K. Based on that evaluation, the Company's principal executive officer and principal financial and accounting officer have concluded that the Company's disclosure controls and procedures are effective as of December 31, 2014 to ensure that information required to be disclosed by the Company in reports that it files or submits under the Exchange Act is recorded, processed, summarized and reported within the time periods specified in Securities and Exchange Commission rules and forms, and includes controls and procedures designed to ensure that information required to be disclosed by the Company in such reports is accumulated and communicated to the Company's management, including the Company's principal executive officer and principal financial and accounting officer, as appropriate, to allow timely decisions regarding required disclosure.

**Management's Annual Report on Internal Control Over Financial Reporting.** The Company's management is responsible for establishing and maintaining adequate internal control over financial reporting. The Company's internal control over financial reporting is a process designed to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles.

The Company's internal control over financial reporting includes policies and procedures that (1) pertain to the maintenance of records that, in reasonable detail, accurately and fairly reflect transactions and dispositions of assets; (2) provide reasonable assurances that transactions are recorded as necessary to permit preparation of financial statements in accordance with generally accepted accounting principles, and that receipts and expenditures are being made only in accordance with authorizations of management and the directors of the Company; and (3) provide reasonable assurance regarding prevention or timely detection of unauthorized acquisition, use or disposition of the Company's assets that could have a material effect on our financial statements.

Because of its inherent limitations, internal control over financial reporting may not prevent or detect misstatements. Also, projections of any evaluation of effectiveness to future periods are subject to the risk that controls may become inadequate because of changes in conditions, or that the degree of compliance with the policies or procedures may deteriorate.

Management assessed the effectiveness of the Company's internal control over financial reporting as of December 31, 2014. In making this assessment, management used the criteria set forth by the Committee of Sponsoring Organizations of the Treadway Commission (COSO) in Internal Control-Integrated Framework (2013). Based on our assessment and those criteria, management concluded that as of December 31, 2014, the Company's internal control over financial reporting was effective.

**Changes in internal controls over financial reporting.** There were no changes in the Company's internal controls over financial reporting that occurred during the fourth quarter of the fiscal year covered by this Annual Report on Form 10-K that have materially affected, or are reasonably likely to materially affect, the Company's internal control over financial reporting.

**ITEM 9B. OTHER INFORMATION.**

**Item 1.01 Entry into a Material Definitive Agreement**

On March 11, 2015 and effective August 11, 2014, our Chairman of the Board entered into a consulting agreement with the Company to serve as Executive Chairman of the Company. The disclosure from Part III, Item 11 Executive Compensation -- “Executive Chairman Agreement”, is hereby incorporated by reference. The description of the Executive Chairman Agreement is qualified in its entirety by reference to the provisions of the Executive Chairman Agreement filed as Exhibit 10.43 to this Form 10-K, which is incorporated by reference herein.

### PART III

#### ITEM 10. DIRECTORS, EXECUTIVE OFFICERS AND CORPORATE GOVERNANCE.

##### Directors And Executive Officers

The names, positions and ages of our directors and executive officers as of March 16, 2015, are as follows:

<b>Name</b>	<b>Age</b>	<b>Position</b>
Sandesh Seth, MS, MBA	50	Executive Chairman
Kaushik J. Dave, PhD, MBA	53	President, Chief Executive Officer, Interim Chief Financial Officer and Director (Principal Executive Officer and Principal Financial and Accounting Officer)
Dragan Cicic, MD	50	Chief Operating Officer and Chief Medical Officer
David Nicholson, PhD	59	Director
Richard I. Steinhart	57	Director
Sergio Traversa, MBA	53	Director

Subject to the classified board provisions of our charter, all directors hold office until the next annual meeting of stockholders and the election and qualification of their successors. Officers are elected annually by the board of directors and serve at the discretion of the board.

Pursuant to the Company's charter, Mr. Traversa and Mr. Seth were appointed as directors of the Company by the former Series E preferred stock holders of Actinium Corporation. During 2011, Actinium Corporation raised \$6.2 million through an offering of 23,697,119 shares (pre-Actinium Share Exchange) of the 2011 Series E preferred shares and 5,924,285 warrants (pre-Actinium share exchange). In January 2012, the Actinium Corporation raised \$0.8 million through its final offering of the 2011 Series E preferred shares.

There are no other arrangements or understanding between any of our directors and any other persons pursuant to which they were selected as a director.

##### Background of Executive Officers and Directors

The principal occupations for the past five years (and, in some instances, for prior years) of each of our directors and executive officers are as follows:

##### Sandesh Seth, MS, MBA, Executive Chairman

Mr. Sandesh Seth has been our Director since March 2012, our Chairman of the Board since October 2013, and Executive Chairman since August 2014. Mr. Seth is also affiliated with Laidlaw & Co. (UK) Ltd., a healthcare focused, investment banking and wealth management firm with \$2.5 billion in assets where he is Head of Healthcare Investment Banking. Mr. Seth is the Lead Director of Relmada Therapeutics, Inc., a publicly listed, specialty pharmaceuticals company focused on pain therapeutics.

Mr. Seth has 20+ years of experience in investment banking (Cowen & Co.), equity research (Bear Stearns, Commonwealth Associates) and in the pharma industry (Pfizer, Warner-Lambert, SmithKline in strategic planning, business development and R&D project management). Mr. Seth has an MBA in Finance from New York University; an M.S. in the Pharmaceutical Sciences from the University of Oklahoma Health Center and a B.Sc. in Chemistry from Bombay University. He has published several scientific articles and was awarded the University Regents Award for Research Excellence at the University of Oklahoma. Mr. Seth was designated as Regulatory Affairs Certified (R.A.C.) by the Regulatory Affairs Professionals Society which signifies proficiency with U.S. FDA regulations.

That Mr. Seth has served in various business executive-level positions over the course of his career, has significant investment banking experience, has developed significant management and leadership skills and is well accustomed to interfacing with investors, analysts, auditors, C-level executives, and outside advisors, led us to conclude that Mr. Seth should serve as a director.

### **Kaushik J. Dave, PhD, MBA, President, Chief Executive Officer, Interim Chief Financial Officer and Director**

Dr. Kaushik J. Dave has been our President, Chief Executive Officer and Director since September 2013, and our Interim Chief Financial Officer since February 2014. From March 2008 to September 2013, Dr. Dave was the Executive Vice President of Product Development for Antares Pharmaceuticals Inc. (Antares). As part of the core management team at Antares, he was instrumental in setting strategy, vision, product portfolio development and business development. Dr. Dave led the clinical and regulatory approval of Anturo1™ and was also a key contributor to the change in company vision to combination products using Antares' medical device technology which resulted in a robust pipeline that included development and New Drug Application submission for Otrexup, which was approved on October 14, 2013. From January 2001 to June 2006, Dr. Dave was Vice President Product Development at Palatin Technologies Inc. where he obtained approval of NeutroSpec™ (a radiopharmaceutical monoclonal antibody product). From January 1997 to December 2000, Dr. Dave was employed at Schering-Plough Inc. and Merck & Co. Inc., responsible for steering the development of several pharmaceutical product development programs. Dr. Dave received his pharmacy degree from the University of Bath, UK and a Ph.D. in Pharmaceutical Chemistry from the University of Kansas. Dr. Dave also received an MBA from the Wharton School of the University of Pennsylvania.

As President and Chief Executive Officer of the Company, Dr. Dave is the most senior executive of the Company and as such provides our Board of Directors with the greatest insight into the Company's business and the challenges and material risks it faces. Dr. Dave has more than 23 years of healthcare industry experience and is especially qualified to understand the risks and leadership challenges facing a growing pharmaceutical company from a senior management and financial expertise perspective led us to conclude that Dr. Dave should serve as President, Chief Executive Officer and Director of the Company.

### **Dragan Cicic, MD, MBA, Chief Operating Officer and Chief Medical Officer**

Dragan Cicic is the Chief Operating Officer and Chief Medical Officer of the Company. He joined the Company in 2005 and previously held the position of the CEO and prior to that of the Medical Director at Actinium. Dr. Cicic joined Actinium from the position of Project Director of QED Technologies Inc., a life sciences strategic consulting and transactional group focused on emerging biotech, pharmaceuticals and medical devices companies. Dr. Cicic prepared business and strategic plans on behalf of those clients and assisted them in raising funding. He also represented corporate and private investors in identifying acquisition and/or investment targets and negotiating, structuring and consummating deals. Prior to joining QED Technologies, Dr. Cicic was an investment banker with SG Cowen Securities.

Dr. Cicic graduated as a Medical Doctor from the School of Medicine at The Belgrade University, and received his MBA from Wharton School at The University of Pennsylvania. He was also a Nieman Fellow at Harvard University.

### **C. David Nicholson, BS, PhD, Director**

C. David Nicholson has been a Director of the Company since 2008. Mr. Nicholson is also a member of our Audit Committee, Compensation Committee and Corporate Governance Committee. In August 2014, Mr. Nicholson joined Actavis plc and Forest Laboratories, Inc. as Senior Vice President, Actavis Global Brands R&D. From March 2012 to August 2014, Mr. Nicholson was on the Executive Committee of Bayer CropScience as Head of Research & Development responsible for the integration of the company's R&D activities into one global organization. Dr. Nicholson graduated in pharmacology, earning his B.Sc. from the University of Manchester (1975) and his Ph.D. from the University of Wales (1980). Between 1978 and 1988, Dr. Nicholson worked in the pharmaceutical industry for the British company Beecham-Wülfling in Gronau, Germany. The main emphasis of his activities as group leader in a multidisciplinary project group was the development of cardiovascular drugs.

From 1988-2007, Dr. Nicholson held various positions of increasing seniority in the UK, the Netherlands and the USA with Organon a Business Unit of Akzo Nobel. Ultimately, he became Executive Vice President, Research & Development, and member of the Organon Executive Management Committee. He implemented change programs, leading to maximizing effectiveness in research & development, ensuring customer focus and the establishment of a competitive pipeline of innovative drugs. In 2007, Dr. Nicholson transferred to Schering-Plough, Kenilworth, New Jersey as Senior Vice President, responsible for Global Project Management and Drug Safety. From 2009 to December 2011, he was Vice President Licensing and Knowledge Management at Merck in Rahway, New Jersey, reporting to the President of Merck R&D. As an integration team member, David Nicholson played a role in the strategic mergers of Organon BioSciences, the human and animal health business of Dutch chemical giant Akzo-Nobel, and Schering-Plough in 2007 as well as of Schering-Plough and Merck in 2009.

That Dr. Nicholson brings over 25 years of pharmaceutical experience to our Board, having served in various pharmaceutical research and development executive-level positions over the course of his career, and that Dr. Nicholson has developed significant management and leadership skills relating to the pharmaceutical industry, and is well accustomed to interfacing with investors, analysts, auditors, outside advisors and governmental officials, led us to conclude that Dr. Nicholson should serve as a director.

### **Richard I. Steinhart, Director**

Richard I. Steinhart has served as our Director and Chairman of the Audit Committee since November 2013. Mr. Steinhart is also a member of our Compensation Committee and Corporate Governance Committee. Since March 2014 Mr. Steinhart has been a Member of the Board of Directors of Atossa Genetics, Inc. where he is Chairman of the Audit Committee and a member of the Compensation Committee. Beginning January 2014, Mr. Steinhart has been a financial and strategic consultant to the biotechnology and medical device industries. From April 2006 through December 2013, Mr. Steinhart was employed by MELA Sciences, Inc., as their Vice President, Finance and Chief Financial Officer, Treasurer and Secretary. In April 2012, Mr. Steinhart received a promotion to Sr. Vice President, Finance and Chief Financial Officer. From May 1992 until joining MELA Sciences, Mr. Steinhart was a Managing Director of Forest Street Capital/SAE Ventures, a boutique investment banking, venture capital, and management consulting firm focused on healthcare and technology companies. Prior to Forest Street Capital/SAE Ventures, he was Vice President and Chief Financial Officer of Emisphere Technologies, Inc. Mr. Steinhart's other experience includes seven years at CW Group, Inc., a venture capital firm focused on medical technology and biopharmaceutical companies, where he was a General Partner and Chief Financial Officer. Mr. Steinhart began his career at Price Waterhouse, now known as PricewaterhouseCoopers. He holds B.B.A. and M.B.A degrees from Pace University and is a Certified Public Accountant (inactive).

That Mr. Steinhart brings over 25 years of financial experience to our Board, having served in various financial executive-level positions over the course of his career, and that Mr. Steinhart is a certified public accountant led us to conclude that Mr. Steinhart should serve as a director and chair the audit committee.

### **Sergio Traversa, Director**

Mr. Traversa has been a Director of the Company since August, 2012. Mr. Traversa is also a member of our Compensation Committee and Corporate Governance Committee. Mr. Traversa is also the Chief Executive Officer and a director of Relmada Therapeutics Inc. Previously, he was the co-founder and CEO of Medeor Inc. a spinoff pharmaceutical company from Cornell University. Mr. Traversa has over 25 years of experience in the healthcare sector in the United States and Europe, ranging from management positions in the pharmaceutical industry to investing and strategic advisory roles. He has held financial analyst, portfolio management and strategic advisory positions at large United States investment firms specializing in healthcare, including Mehta and Isaly and Mehta partners, ING Barings, Merlin BioMed and Rx Capital. Mr. Traversa was a founding partner of Ardana Capital, a pharmaceutical and biotechnology investment advisory firm. In Europe, he held the position of Area Manager for Southern Europe (Italy, Spain, Greece and Portugal) of Therakos Inc., a cancer and immunology division of Johnson & Johnson. Prior to Therakos, Dr. Traversa was at Eli Lilly, where he served as Marketing Manager of the Hospital Business Unit. He was also a member of the CNS team at Eli Lilly, where he participated in the launch of Prozac and the early development of Zyprexa and Cymbalta. Mr. Traversa started his career as a sales representative at Farmitalia Carlo Erba, the largest pharmaceutical company in Italy later sold to Pharmacia and now part of Pfizer. Mr. Traversa holds a Laurea degree in Pharmacy from the University of Turin (Italy) and an MBA in Finance and International Business from the New York University Leonard Stern School of Business.

Mr. Traversa is a senior executive in the pharmaceutical industry and as such provides our Board of Directors with great insight into the Company's business and the challenges and material risks it faces. That Mr. Traversa has more than 25 years of healthcare and financial industry experience in the United States and Europe and is especially qualified to understand the risks and leadership challenges facing a growing pharmaceutical company from a senior management and financial expertise perspective led us to conclude that Mr. Traversa should serve as a director.

### **Corporate Governance**

The Board of Directors oversees our business affairs and monitors the performance of management. In accordance with our corporate governance principles, the Board of Directors does not involve itself in day-to-day operations. The directors keep themselves informed through discussions with the Chief Executive Officer, the Executive Chairman, and other key executives and by reading the reports and other materials that we send them and by participating in Board of Directors and committee meetings.

#### ***Term of Office***

Our directors are divided into three classes, designated Class I, Class II and Class III. Class I consists of two directors, Class II consists of two directors, and Class III consists of the chief executive officer.

The term of each director is set forth below or until their successors are duly elected:

<b>Director</b>	<b>Class</b>	<b>Term (from 2014 Annual Meeting)</b>
Kaushik Dave	Class III	24 months
David Nicholson	Class I	36 months
Sandesh Seth	Class II	12 months
Sergio Traversa	Class II	12 months
Richard Steinhart	Class I	36 months

Notwithstanding the foregoing, each director shall serve until his successor is duly elected and qualified, or until his or her retirement, death, resignation or removal.

## ***Director Independence***

We use the definition of “independence” of the NYSE MKT to make this determination. NYSE MKT corporate governance rule Sec. 803(A)(2) provides that an “independent director” means a person other than an executive officer or employee of the company. No director qualifies as independent unless the issuer’s board of directors affirmatively determines that the director does not have a relationship that would interfere with the exercise of independent judgment in carrying out the responsibilities of a director. The following is a non-exclusive list of persons who shall not be considered independent under NYSE MKT rules:

- a director who is, or during the past three years was, employed by the company, other than prior employment as an interim executive officer (provided the interim employment did not last longer than one year);
- a director who accepted or has an immediate family member who accepted any compensation from the company in excess of \$120,000 during any period of twelve consecutive months within the three years preceding the determination of independence, other than the following:
  - (i) compensation for board or board committee service,
  - (ii) compensation paid to an immediate family member who is an employee (other than an executive officer) of the company,
  - (iii) compensation received for former service as an interim executive officer (provided the interim employment did not last longer than one year), or
  - (iv) benefits under a tax-qualified retirement plan, or non-discretionary compensation;
- a director who is an immediate family member of an individual who is, or at any time during the past three years was, employed by the company as an executive officer;
- a director who is, or has an immediate family member who is, a partner in, or a controlling shareholder or an executive officer of, any organization to which the company made, or from which the company received, payments (other than those arising solely from investments in the company’s securities or payments under non-discretionary charitable contribution matching programs) that exceed 5% of the organization’s consolidated gross revenues for that year, or \$200,000, whichever is more, in any of the most recent three fiscal years;
- a director who is, or has an immediate family member who is, employed as an executive officer of another entity where at any time during the most recent three fiscal years any of the issuer’s executive officers serve on the compensation committee of such other entity; or
- a director who is, or has an immediate family member who is, a current partner of the company’s outside auditor, or was a partner or employee of the company’s outside auditor who worked on the company’s audit at any time during any of the past three years.

Our Common Stock is currently listed on the NYSE MKT exchange under the ticker symbol “ATNM”. Under the above-mentioned NYSE MKT director independence rules David Nicholson, Richard Steinhart and Sergio Traversa are independent directors of the Company.

## **Executive Chairman**

In August 2014, our Board created the office of Executive Chairman of the Company and appointed Sandesh Seth, our Chairman of the Board, as Executive Chairman of our Company.

As Executive Chairman of our Company, Mr. Seth acts as an officer and consultant and, as such, performs his duties subject in all instances to the oversight of our board of directors and the power of our board of directors to approve all applicable corporation actions (which powers shall not be vested in the office of Executive Chairman). The Executive Chairman is not an “executive officer” (as defined in SEC Rule 3b-7) of our Company as the role of the Executive Chairman by design is not an officer who performs a policy making function for our Company. Rather, the Executive Chairman serves as a conduit between our board and our executive management team and is available to act as an advisor and consultant to our executive management team, who are responsible for development and implementation of our corporate policies under the supervision of our board of directors.

Subject to such other roles, duties and projects as may (consistent with the terms and provisions of our Amended and Restated Bylaws and the resolutions of our board that formed the office of Executive Chairman) be assigned by our board to the Executive Chairman, the primary responsibilities of the Executive Chairman are as follows:

i) Chair annual and special board meetings and annual stockholder meetings and, subject to availability, attend meetings of the committees of the board;

ii) Provide overall board leadership and establish guiding principles for the board;

iii) Manage the affairs of the board and facilitate board action in such a way that strategic and policy decisions are fully discussed, debated and decided by the board;

iv) In cooperation with the President and Chief Executive Officer, and other Company Officers as appropriate or selected by the Executive Chairman/Board, ensure that our strategic orientation is defined and communicated to the board for its approval and that all material issues are dealt with by the board in a timely manner;

v) Ensure that the board has efficient communication channels regarding all material issues concerning the business and see to it that directors are informed about these issues;

vi) Act as a representative of the board and consult with board members outside the regularly scheduled meetings of the board and of board committees;

vii) Meet and confer as often as required with our President and Chief Executive Officer and executive management to ensure that there is efficient communication between the Executive Chairman, the President and Chief Executive Officer, other executive management and board members;

viii) Offer advice and consultation to the President and Chief Executive Officer and executive management on the overall management of the business and affairs of our company as well as specific matters upon the request of the President and Chief Executive Officer and or the board;

ix) In consultation and partnership with the President and Chief Executive Officer, the Executive Chairman may act as our representative with business partners of our company; and

x) At the request of the board or the President and Chief Executive Officer the Executive Chairman may be placed in charge of special corporate strategic initiatives or projects.

#### **Board Leadership Structure**

Our Board has a policy that calls for the role of Chairman of the Board and Chief Executive Officer (CEO) to be separate, as it believes that the most effective leadership structure for us at this time is not to have these roles combined. Dr. Kaushik J. Dave serves as our President and Chief Executive Officer and Sandesh Seth is our Chairman of the Board who serves as the Executive Chairman. We believe this structure of having a separate CEO and Chairman provides proper oversight of our operations.

#### **Board of Directors Meetings and Attendance**

During the fiscal year 2014, the Board of Directors held 48 meetings. Each member of our Board was present at eighty-five (85%) percent or more of the Board meetings held. No actions were approved by unanimous written consent. It is our policy that directors should make every effort to attend the annual meeting of stockholders, and each of our directors. Sandesh Seth, Kaushik Dave, David Nicholson, Richard Steinhart and Sergio Traversa, attended the annual meeting of stockholders in 2014.

## Committees of the Board of Directors

Our board of directors has formed three standing committees: audit, compensation and corporate governance. Actions taken by our committees are reported to the full board. Each of our committees has a charter and each charter is posted on our website.

<b>Audit Committee</b>	<b>Compensation Committee</b>	<b>Corporate Governance Committee</b>
Richard I. Steinhart*	Dr. David Nicholson*	Sergio Traversa*
Dr. David Nicholson	Richard I. Steinhart	David Nicholson
	Sergio Traversa	Richard I. Steinhart

\* Indicates committee chair

### *Audit Committee*

Our audit committee, which currently consists of two directors, provides assistance to our board in fulfilling its legal and fiduciary obligations with respect to matters involving the accounting, financial reporting, internal control and compliance functions of the company. Our audit committee employs an independent registered public accounting firm to audit the financial statements of the company and perform other assigned duties. Further, our audit committee provides general oversight with respect to the accounting principles employed in financial reporting and the adequacy of our internal controls. In discharging its responsibilities, our audit committee may rely on the reports, findings and representations of the company's auditors, legal counsel, and responsible officers. Our board has determined that all members of the audit committee are financially literate within the meaning of SEC rules and under the current listing standards of the NYSE MKT. Richard I. Steinhart is the chairman of the audit committee.

### *Compensation Committee*

Our compensation committee, which currently consists of three directors, establishes executive compensation policies consistent with the company's objectives and stockholder interests. Our compensation committee also reviews the performance of our executive officers and establishes, adjusts and awards compensation, including incentive-based compensation, as more fully discussed below. In addition, our compensation committee generally is responsible for:

- establishing and periodically reviewing our compensation philosophy and the adequacy of compensation plans and programs for our directors, executive officers and other employees;
- overseeing our compensation plans, including the establishment of performance goals under the company's incentive compensation arrangements and the review of performance against those goals in determining incentive award payouts;
- overseeing our executive employment contracts, special retirement benefits, severance, change in control arrangements and/or similar plans;
- acting as administrator of any company stock option plans; and
- overseeing the outside consultant, if any, engaged by the compensation committee.

Our compensation committee periodically reviews the compensation paid to our non-employee directors and the principles upon which their compensation is determined. The compensation committee also periodically reports to the board on how our non-employee director compensation practices compare with those of other similarly situated public corporations and, if the compensation committee deems it appropriate, recommends changes to our director compensation practices to our board for approval.

Outside consulting firms retained by our compensation committee and management also will, if requested, provide assistance to the compensation committee in making its compensation-related decisions.

### **Corporate Governance Committee**

Corporate Governance Committee, which currently consists of three directors, monitors our corporate governance system.

### **Family Relationships**

There are no family relationships among any of our officers or directors.

### **Involvement in Certain Legal Proceedings**

To our knowledge, none of our current directors or executive officers has, during the past ten years:

- been convicted in a criminal proceeding or been subject to a pending criminal proceeding (excluding traffic violations and other minor offenses);
- had any bankruptcy petition filed by or against the business or property of the person, or of any partnership, corporation or business association of which he was a general partner or executive officer, either at the time of the bankruptcy filing or within two years prior to that time;
- been subject to any order, judgment, or decree, not subsequently reversed, suspended or vacated, of any court of competent jurisdiction or federal or state authority, permanently or temporarily enjoining, barring, suspending or otherwise limiting, his involvement in any type of business, securities, futures, commodities, investment, banking, savings and loan, or insurance activities, or to be associated with persons engaged in any such activity;
- been found by a court of competent jurisdiction in a civil action or by the SEC or the Commodity Futures Trading Commission to have violated a federal or state securities or commodities law, and the judgment has not been reversed, suspended, or vacated;
- been the subject of, or a party to, any federal or state judicial or administrative order, judgment, decree, or finding, not subsequently reversed, suspended or vacated (not including any settlement of a civil proceeding among private litigants), relating to an alleged violation of any federal or state securities or commodities law or regulation, any law or regulation respecting financial institutions or insurance companies including, but not limited to, a temporary or permanent injunction, order of disgorgement or restitution, civil money penalty or temporary or permanent cease-and-desist order, or removal or prohibition order, or any law or regulation prohibiting mail or wire fraud or fraud in connection with any business entity; or
- been the subject of, or a party to, any sanction or order, not subsequently reversed, suspended or vacated, of any self-regulatory organization (as defined in Section 3(a)(26) of the Exchange Act), any registered entity (as defined in Section 1(a)(29) of the Commodity Exchange Act), or any equivalent exchange, association, entity or organization that has disciplinary authority over its members or persons associated with a member.

Except as set forth in our discussion below in “Certain Relationships and Related Transactions,” none of our directors or executive officers has been involved in any transactions with us or any of our directors, executive officers, affiliates or associates which are required to be disclosed pursuant to the rules and regulations of the SEC.

### **Code of Ethics**

The Company has adopted a code of ethics, a copy of which is attached as Exhibit 14.1 to the Form 8-K filed on January 2, 2013.

### **Compliance with Section 16 (a) of the Exchange Act**

Under Section 16(a) of the Exchange Act, our directors and certain of our officers, and persons holding more than 10 percent of our common stock are required to file forms reporting their beneficial ownership of our common stock and subsequent changes in that ownership with the United States Securities and Exchange Commission.

Based solely upon a review of copies of such forms filed on Forms 3, 4, and 5, and amendments thereto furnished to us, except for a Form 3 for David Nicholson – a Director of the Company, a Form 4 for Dragan Cicic – our COO and CMO, and two forms 4’s for Kaushik David – our President and CEO, we believe that as of December 31, 2014, our executive officers, directors and greater than 10 percent beneficial owners have complied on a timely basis with all Section 16(a) filing requirements.

## **ITEM 11. EXECUTIVE COMPENSATION**

### **Summary Compensation Table**

The following table provides information regarding the compensation earned during the fiscal years ended December 31, 2014, December 31, 2013 and December 31, 2012 by our Chief Executive Officer and the two next most highly compensated executive officers.

Name/Position	Year	Salary	Bonus	Option Awards	All Other Compensation (3)	Total
Kaushik J. Dave, President and CEO (1)	2014	\$ 350,000	\$ 92,042	\$ 798,865	\$ 397,844	\$ 1,638,751
	2013	112,134		32,830	56,875	201,839
Jack Talley, former CEO, resigned on February 28, 2013	2014	\$ -	\$ -	\$ -	\$ -	\$ -
	2013	298,077	-	22,481	-	320,558
Dragan Cicic, COO (2)	2014	\$ 260,416	\$ 88,000	\$ 101,844	\$ 4,081	\$ 454,341
	2013	213,118	-	75,463	-	288,581
Enza Guagenti, former CFO, resigned on March 9, 2013	2014	\$ -	\$ -	\$ -	\$ -	\$ -
	2013	28,025	-	1,180	-	29,205

(1) Dr. Kaushik J. Dave became the Company's President and CEO on September 16, 2013.

(2) Dr. Cicic's options awards were determined by taking into consideration the following factors: (i) Dr. Cicic's responsibilities at the Company; (ii) his performance historically and as an incentive for future efforts; (iii) compensation data taken from peer group companies (newly public biotech firms); and (iv) the level of his past awards.

(3) Includes restricted stock based compensation awarded during the period.

As an "emerging growth company" we will not be required to provide information relating to the ratio of total compensation of our Chief Executive Officer to the median of the annual total compensation of all of our employees, as required by the Investor Protection and Securities Reform Act of 2010, which is part of the Dodd-Frank Wall Street Reform and Consumer Protection Act.

#### Director Compensation

Historically non-management Directors of the Company do not receive any cash compensation. Commencing October 1, 2012, our non-management Directors began to receive a quarterly cash retainer of \$7,500 per calendar quarter for their service on the Board of Directors. They also receive reimbursement for out-of-pocket expenses and certain directors have received stock option grants for shares of Company Common Stock as described below.

The following table sets forth the compensation of our directors for the 2014 fiscal year:

Name	Fees Earned or Paid in Cash	Stock Awards	Option Awards (1)	All Other Compensation	Total
David Nicholson	\$ 30,000	-	-	-	\$ 30,000
Sandesh Seth	\$ 18,424	-	-	-	\$ 18,424
Richard Steinhart	\$ 30,000	-	-	-	\$ 30,000
Sergio Traversa	\$ 30,000	-	-	-	\$ 30,000

(1) At the end of fiscal year 2014, the aggregate number of option awards outstanding for each director was as follows: (i) for Mr. Nicholson, 99,900, (ii) for Mr. Seth, 49,950 (Exclude options granted to Mr. Seth not for services as a director), (iii) for Mr. Steinhart, 49,950, and (iv) for Mr. Traversa, 69,950.

Under the terms of our Director Compensation Program, the non-employee members of our Board of Directors are paid a fixed annual fee of \$30,000 payable in four quarterly payments. On August 12, 2014, Sandesh Seth became the Executive Chairman of the Company and stopped receiving compensation as a board member. The amount shown in the table represents fees paid to him through August 12, 2014.

Commencing in February 2015, our non-employee directors will be paid an annual fee of \$40,000 and receive annual option grants of 25,000 shares. Board committee members will receive the following compensation:

BOD Committee	Chairman	Member
Audit	\$ 15,000	\$ 6,000
Compensation	\$ 10,000	\$ 5,000
Corporate Governance	\$ 7,500	\$ 3,000

## Employment Agreements

### Compensatory Plan with Kaushik Dave (Principal Executive Officer)

Effective September 16, 2013, the Company and Dr. Kaushik J. Dave entered into an agreement (the "Employment Agreement"), to employ Dr. Dave as the Company's Chief Executive Officer. Dr. Dave shall have such responsibilities, duties and authority as are assigned to him by the Board, or its designee. These responsibilities shall include implementation of the overall direction of the Company as set by the Board, including, planning, corporate policies, research and development, staffing, finance and operations. Dr. Dave shall perform such other duties and shall have authority consistent with his position as may be from time to time specified by the Board and subject to the discretion of the Board. Dr. Dave reports directly to the Board. Dr. Dave also agreed to devote his best efforts and substantially all of his business time to advance the interests of the Company and to discharge adequately his duties under the Employment Agreement. Dr. Dave may hold up to two board seats on for-profit and not-for-profit boards that do not represent a conflict with the Company and subject to Board approval after review of the time commitment involved.

Pursuant to the Employment Agreement, Dr. Dave is entitled to the following compensation and benefits:

- A base salary at an annual rate of \$350,000.

Upon the six month anniversary of the start date, the Board will review Dr. Dave's base salary with the help of an independent compensation consultant to adjust the base salary to be competitively aligned to a range between the 25th (twenty-fifth) and 75th (seventy-fifth) percentile of the relevant market data of CEO positions of similarly situated publicly traded Biotech companies. The Board shall review the amount of the base salary and performance bonus, and shall determine the appropriate adjustments to each component of Dr. Dave's compensation within 60 days of the start of each calendar year.

In addition, for the duration that the Company maintains its primary office in New York City, the Company will reimburse Dr. Dave for up to \$500 per month in travel expenses plus the dollar amount of the difference between Dr. Dave's New York State and New Jersey State taxes based on income from the Company.

- Dr. Dave shall be entitled to participate in an executive bonus program, which shall be established by the Board pursuant to which the Board shall award bonuses to Dr. Dave, based upon the achievement of written individual and corporate objectives such as the Board shall determine. Upon the attainment of such performance objectives, Dr. Dave shall be entitled to a cash bonus in an amount to be determined by the Board with a target of forty percent (40%) of the base salary. Within thirty (30) days after the start date, the Board shall establish written individual and corporate performance objectives for the balance of 2013 and the amount of the performance pro-rata bonus payable upon the attainment of each objective. At least thirty (30) days before each subsequent calendar year, the Board shall establish written individual and corporate performance objectives for such calendar year and the amount of the performance bonus payable upon the attainment of such objectives. Within sixty (60) days after the end of each calendar year, the Board shall determine the amount of any performance bonus payable thereunder. Any such performance bonus shall be due and payable within ninety (90) days after the end of the calendar year to which it relates.
- The Board has agreed to grant to Dr. Dave an option to purchase common shares of the Company and restricted stock (the "Grant"). The Grant will consist of (A) an option grant to purchase 675,000 common shares of the Company; (B) 125,000 shares of restricted and (C) 100,000 shares of restricted stock as a sign-on bonus of which fifty percent will vest at the one year anniversary of the start date upon starting work. An additional twenty-five percent each will vest at eighteen months and twenty-four months after the start date.

Stock Options. Such options will have an exercise price equal to the prior day closing price of the Company's common stock which is equal to fair market value as determined by the Board on the date of the grant (the "Grant date"). The Grant Date shall occur no later than 90 days from the start date.

Restricted Stock Grant (excluding the sign-on bonus). One third (33.33%) of the restricted stock shall be granted upon the next closing of a financing of the Company of at least \$5 million, and shall vest per the vesting schedule below. The remaining two thirds (66.66%) of the restricted stock shall be granted upon the treatment of the first patient in 2014 for the Iomab<sup>TM</sup>-B trial and subject to the vesting schedule below.

Vesting Schedule. Twenty-eight percent (28%) of the initial options or restricted stock granted shall vest twelve months after the date of grant and two percent (2%) of the remainder shall vest each month thereafter until fully vested. Such additional options or restricted stock will have an exercise price per share which is equal to fair market value as determined by the Board on the date of the grant. Two percent (2%) of such additional options or stock shall vest each month thereafter until fully vested. The term of all options granted under this Agreement will be for 10 years from the date of grant, subject to Dr. Dave's continuing service with the Company.

- Dr. Dave is also eligible to participate in the Company's benefit plans that are generally provided for executive employees.
- The employment agreement also contains a non-solicitation provision that provides that during the term of employment and for a period of 24 months following the cessation of employment with the company you Dr. Dave shall not directly or indirectly solicit, induce, recruit or encourage any of the Company's employees or consultants to terminate their relationship with the Company, or attempt any of the foregoing, either for himself or any other person or entity

On July 23, 2012, Actinium Corporation entered into an employment agreement with Jack Talley, as our, Chief Executive Officer. The initial term of employment was for a period of three (3) years, provided that Mr. Talley's employment with the company will be on an "at will" basis. Actinium Corporation agreed to pay a base salary of \$250,000 per annum. The board will review Mr. Talley's base salary with help of an independent compensation consultant to adjust his base salary to be competitively aligned to a range between the 25th and 75th percentile of the relevant market data of CEO positions of similarly situated publicly traded biotech companies. Mr. Talley was also entitled to participate in an executive bonus program, which shall be established by the board pursuant to which the board shall award bonuses to Mr. Tally, based on achievement of written individual and corporate objectives such as the board shall determine. Upon the attainment of such performance objectives, in addition to base salary, Mr. Talley was entitled to a cash bonus in an amount to be determined by the Board up to fifty percent (50%) of his base salary. Actinium Corporation also agreed to grant to Mr. Talley an option grant to purchase common shares of the Company equal to three percent (3.0%) of the Company's issued and outstanding equity (common and preferred shares) on a fully diluted basis. Such options had an exercise price of \$0.261 cents per share which is equal to fair market value as determined by the board on the date of the grant. Twenty-eight percent (28%) of the initial options granted shall vest twelve months after the date of grant and two percent (2%) of the remainder shall vest each month thereafter until fully vested. Additional options were to be granted upon the final closing of the Company's next financing so that total options granted would equal three percent (3%) of fully diluted shares on that date. Such additional options will have an exercise price per share which is equal to fair market value as determined by the Board on the date of the grant. Two percent (2%) of such additional options shall vest each month thereafter until fully vested. The term of all options granted under this Agreement will be for 10 years from the date of grant, subject to your continuing service with the Company. On February 28, 2013, Mr. Talley resigned as Chief Executive Officer and Director of the Company and Actinium Corporation as per the terms of the Severance Agreement (as described below).

On January 2, 2006, Actinium Corporation entered into an employment agreement with Dragan Cicic, as our, Chief Operating Officer and Chief Medical Officer. The term of the employment agreement is one year; provided that the term shall be automatically extended for successive one year periods thereafter, unless, no later than 60 days prior to the expiration of any successive one-year renewal term, either party thereto provides the other party written notice of its desire not to extend the term. Actinium agreed to pay a base salary of \$144,758 per annum during the term with an annual percentage increase of not less than an amount equal to the aggregate preceding 12 months annual percentage increase of the U.S. Department of Labor Consumer Price Index for All Urban Consumers (CPI-U) for the New York area. Mr. Cicic is also entitled to participate in any incentive compensation or bonus program which is instituted or maintained for company executives generally during the term of the agreement.

On July 21, 2012, Actinium entered into an employment agreement with Enza Guagenti, as our Chief Financial Officer. Ms. Guagenti's employment with the Company is on an "at will" basis, meaning that either Ms. Guagenti or the Company may terminate your employment at any time for any reason or no reason, without further obligation or liability, except that upon termination of Ms. Guagenti's employment by the Company other than for cause Ms. Guagenti will be entitled to severance equal to 3 months base salary. In the event that a) the Company hires a CFO other than yourself, and 2) within two years thereafter Ms. Guagenti's base salary is reduced below \$115,000 per year, Ms. Guagenti may then within thirty days after the base salary reduction resign her position with the Company and collect the severance. Actinium Corporation agreed to pay an initial base salary of \$90,000. Ms. Guagenti's annual base salary will be increased to one hundred fifteen thousand dollars (\$115,000) on the six month anniversary of the start date. Thereafter, before the beginning of each calendar year during the term of her employment, beginning in January 2014, the board shall review the amount of Ms. Guagenti's base salary and performance bonus, and shall determine the appropriate adjustments to each component of her compensation for the following calendar year. The Company also agreed to grant to Ms. Guagenti an option grant to purchase 75,000 common shares of the Company. Such options will have an exercise price of \$0.261 cents per share which is equal to fair market value as determined by the board on the date of the grant. Two percent (2%) of the options granted shall vest each month after the date of grant until fully vested. The term of all options granted under this Agreement will be for 10 years from the date of initial grant, subject to Ms. Guagenti's continuing service with the Company. On March 9, 2013, Ms. Guagenti resigned as Chief Financial Officer of the Company and Actinium Corporation. Pursuant to the terms of the employment agreement, Ms. Guagenti did not receive any severance payments upon resignation.

#### **Severance Agreement**

On February 28, 2013, the Company entered into a Separation and Settlement Agreement with the Company's former Chief Executive Officer (the "Separation Agreement"). The material terms of the Separation Agreement are included in a Form 8-K filed by the Company with the SEC on February 28, 2013.

#### **Agreement with former Director**

On May 31, 2013, Dr. Rosemary Mazanet resigned as a director of the Company and Actinium Corporation, a subsidiary of the Company, to pursue other opportunities. Dr. Mazanet's decision to resign from the board of directors of the Company was not based upon any disagreement with the Company on any matter relating to the Company's operations, policies or practices as contemplated by Item 5.02(a) of Form 8-K. The material terms of an agreement entered into with Dr. Mazanet is included in a Form 8-K filed by the Company with the SEC on May 31, 2013.

#### **Executive Chairman Agreement**

In an agreement dated March 11, 2015 and effective August 11, 2014, our Chairman of the Board entered into a consulting agreement with the Company to serve as Executive Chairman of the Company. The Executive Chairman acts as an officer and consultant and, as such, performs his duties subject in all instances to the oversight of our board of directors and the power of our board of directors to approve all applicable corporation actions (which powers shall not be vested in the office of Executive Chairman). The Executive Chairman is not an "executive officer" (as defined in SEC Rule 3b-7) of our company as the role of the Executive Chairman by design is not an officer who performs a policy making function for our company. Rather, the Executive Chairman serves as a conduit between our board and our executive management team and is available to act as an advisor and consultant to our executive management team, who are responsible for development and implementation of our corporate policies under the supervision of our board of directors.



The Executive Chairman will be paid an annual consulting fee of \$350,000. During the term of this agreement, the annual consulting fee shall be maintained at least at the same amount as the annual salary of the Chief Executive Officer of the Company. The Executive Chairman is also entitled to participate in a Company bonus program, which shall be established by the Board pursuant to which the Board shall award bonuses to the consultant, based upon the achievement of written individual and corporate objectives such as the Board shall determine. During the term of the agreement, the performance cash bonus shall be at least at the same amount as the performance cash bonus paid to the Chief Executive Officer of the Company. On September 23, 2014, the Board also granted to the Executive Chairman an option to purchase 280,000 common shares of the Company at an exercise price of \$6.13 per share. The options vest at the rate of 2% of the grant each month from the grant Date until fully vested in accordance with the provisions of the Company's Amended and Restated 2013 Stock Plan. The Executive Chairman shall also be awarded stock option and/or restricted stock grants at least at the same amount as such stock option and/or restricted stock that is granted to the Chief Executive Officer of the Company. The agreement has a 5 year term. As of March 16, 2015, the Executive Chairman has not been paid under this agreement.

#### Outstanding Equity Awards at Fiscal Year-End Table

#### OUTSTANDING EQUITY AWARDS AT FISCAL YEAR-END - 2014

The following table sets forth all unexercised options and unvested restricted stock that have been awarded to our named executives by the Company and were outstanding as of December 31, 2014.

Name	Option Awards				Stock Awards				
	Number of Securities Underlying Unexercised Options (#) (a)	Number of Securities Underlying Unexercised Options (#) (b)	Equity Incentive Plan Awards: Number of Securities Underlying Unexercised Options (#) (d)	Option Exercise Price (\$) (e)	Option Expiration Date (f)	Number of Shares or Units of Stock That Have Not Vested (g)	Market Value of Shares or Units of Stock That Have Not Vested (\$) (h)	Equity Incentive Plan Awards: Number of Shares, Units or Other Rights That Have Not Vested (#) (i)	Equity Incentive Plan Awards: Market or Payout Value of Unearned Shares, Units or Other Rights That Have Not Vested (\$) (j)
Kaushik J. Dave	-	675,000	-	6.70	12/16/2023	191,667	1,128,919	-	-
Dragan Cacic	48,485	-	-	0.78	10/25/2016	-	-	-	-
	33,300	-	-	0.78	11/28/2017	-	-	-	-
	226,440	106,560	-	0.78	02/10/2022	-	-	-	-
	27,972	21,978	-	1.50	08/30/2022	-	-	-	-
	23,976	25,974	-	1.50	12/19/2022	-	-	-	-
	6,300	25,200	-	5.55	02/21/2024	-	-	-	-

#### Indemnification of Directors and Officers

Section 102(b)(7) of the Delaware General Corporation Law allows a corporation to provide in its certificate of incorporation that a director of the corporation will not be personally liable to the corporation or its stockholders for monetary damages for breach of fiduciary duty as a director, except where the directors breached the duty of loyalty, failed to act in good faith, engaged in intentional misconduct or knowingly violated a law, authorized the payment of a dividend or approved a stock repurchase in violation of Delaware corporate law or obtained an improper personal benefit. Our certificate of incorporation provides for this limitation of liability.

Section 145 of the General Corporation Law of the State of Delaware provides that a Delaware corporation may indemnify any person who was, is or is threatened to be made, party to any threatened, pending or completed action, suit or proceeding, whether civil, criminal, administrative or investigative (other than an action by or in the right of such corporation), by reason of the fact that such person is or was an officer, director, employee or agent of such corporation or is or was serving at the request of such corporation as a director, officer employee or agent of another corporation or enterprise. The indemnity may include expenses (including attorneys' fees), judgments, fines and amounts paid in settlement actually and reasonably incurred by such person in connection with such action, suit or proceeding, provided such person acted in good faith and in a manner he reasonably believed to be in or not opposed to the corporation's best interests and, with respect to any criminal action or proceeding, had no reasonable cause to believe that his conduct was illegal. A Delaware corporation may indemnify any persons who are, or were, a party to any threatened, pending or completed action or suit by or in the right of the corporation by reason of the fact that such person is or was a director, officer, employee or agent of another corporation or enterprise. The indemnity may include expenses (including attorneys' fees) actually and reasonably incurred by such person in connection with the defense or settlement of such action or suit, provided such person acted in good faith and in a manner he reasonably believed to be in or not opposed to the corporation's best interests, provided that no indemnification is permitted without judicial approval if the officer, director, employee or agent is adjudged to be liable to the corporation. Where an officer or director is successful on the merits or otherwise in the defense of any action referred to above, the corporation must indemnify him against the expenses which such officer or directors has actually and reasonably incurred.

Section 145 further authorizes a corporation to purchase and maintain insurance on behalf of any person who is or was a director, officer, employee or agent of the corporation or is or was serving at the request of the corporation as a director, officer, employee or agent of another corporation or enterprise, against any liability asserted against him and incurred by him in any such capacity, or arising out of his status as such, whether or not the corporation would otherwise have the power to indemnify him under Section 145.

Our bylaws provide that we will indemnify our directors and officers to the fullest extent authorized by the General Corporation Law of the State of Delaware. Expenses (including attorneys' fees) incurred by an officer or director of the Corporation in defending any civil, criminal, administrative or investigative action, suit or proceeding may be paid by the Company in advance of the final disposition of such action, suit or proceeding upon receipt of an undertaking by or on behalf of such director or officer to repay such amount if it shall ultimately be determined that such person is not entitled to be indemnified by the Company as authorized under Delaware law. Such expenses (including attorneys' fees) incurred by former directors and officers or other employees and agents of the Company or by persons serving at the request of the Company as directors, officers, employees or agents of another corporation, partnership, joint venture, trust or other enterprise may be so paid upon such terms and conditions, if any, as the Company deems appropriate.

The indemnification rights set forth above shall not be exclusive of any other right which an indemnified person may have or hereafter acquire under any bylaw, agreement, vote of stockholders or disinterested directors or otherwise, both as to action in such person's official capacity and as to action in another capacity while holding such office, and shall continue as to a person who has ceased to be a director, officer, employee, or agent and shall inure to the benefit of the heirs, executors, and administrators of such person.

We maintain a general liability insurance policy that covers liabilities of directors and officers of our corporation arising out of claims based on acts or omissions in their capacities as directors or officers.

#### **Actinium Holdings Ltd. Indemnification**

Pursuant to a letter Agreement dated, July 2011, between API and Actinium Holdings Ltd., API agreed to indemnify certain officers and directors of a predecessor company. Pursuant to the agreement, API will not, and will not permit any of its subsidiaries to, eliminate or otherwise reduce the right of any present or former director or officer of API, Actinium Pharmaceuticals Limited, a Bermuda corporation that merged into the Company ("APL"), and/or the present and former subsidiaries of API or APL (all such entities, collectively, the "Company Group") who currently serves, or at any time prior to the date thereof served, in any such capacity (all such directors and officers, collectively "Company Group Managers") to be indemnified against any costs or expenses (including reasonable attorneys' fees), judgments, fines, losses, claims, damages or liabilities of any nature whatsoever, incurred in connection with any claim, action, suit, proceeding or investigation, whether civil, criminal, administrative or investigative, arising out of or pertaining to matters existing or occurring on, prior to or after the date thereof, whether asserted or claimed prior to, on or after the date thereof, arising, in whole or in part, out of or pertaining to the fact that he or she is or was, or at any time in the future will have been, a Company Group Manager or is or was, or at any time in the future will have been, serving at the request of any entity in the Company Group (or at the request of any present or former affiliate (as such term is defined in Rule 405 under the Securities Act of 1933, as amended) of API for and on behalf of any entity in the Company Group as a director, officer, employee, fiduciary or agent of another corporation, partnership, joint venture, trust, other entity or otherwise, or to be advanced expenses, in any of the foregoing cases, to the fullest extent that such Company Group Manager would be entitled to be indemnified or advanced expenses under applicable law, API's or any such subsidiaries' certificate or articles of incorporation or bylaws or equivalent documents or any applicable contract (collectively, the "Applicable Documents"), in each case, as in effect on the date thereof.

The indemnification rights set forth above shall not be exclusive of any other right which an indemnified person may have or hereafter acquire under any bylaw, agreement, vote of stockholders or disinterested directors or otherwise, both as to action in such person's official capacity and as to action in another capacity while holding such office, and shall continue as to a person who has ceased to be a director, officer, employee, or agent and shall inure to the benefit of the heirs, executors, and administrators of such person.

We maintain a general liability insurance policy that covers liabilities of directors and officers of our corporation arising out of claims based on acts or omissions in their capacities as directors or officers.

At the present time, there is no pending litigation or proceeding involving a director, officer, employee, or other agent of ours in which indemnification would be required or permitted. We are not aware of any threatened litigation or proceeding that may result in a claim for such indemnification.



## ITEM 12. SECURITY OWNERSHIP OF CERTAIN BENEFICIAL OWNERS AND MANAGEMENT

The following table shows the beneficial ownership of our Common Stock as of March 16, 2015 held by (i) each person known to us to be the beneficial owner of more than five percent (5%) of any class of our shares; (ii) each director; (iii) each executive officer; and (iv) all directors and executive officers as a group.

Beneficial ownership is determined in accordance with the rules of the SEC, and generally includes voting power and/or investment power with respect to the securities held. Shares of Common Stock subject to options and warrants currently exercisable or which may become exercisable within 60 days of February 26, 2014, are deemed outstanding and beneficially owned by the person holding such options or warrants for purposes of computing the number of shares and percentage beneficially owned by such person, but are not deemed outstanding for purposes of computing the percentage beneficially owned by any other person. Except as indicated in the footnotes to this table, the persons or entities named have sole voting and investment power with respect to all shares of our Common Stock shown as beneficially owned by them.

The percentages below are based on fully diluted shares of our Common Stock equivalents as of March 16, 2015. Unless otherwise indicated, the principal address of each of the persons below is c/o Actinium Pharmaceuticals, Inc., 546 Fifth Avenue, 14th floor, New York, NY 10036.

<b>Executive Officers and Directors</b>	<b>Number of Shares of Common Stock and Preferred Stock Beneficially Owned</b>	<b>Percentage of Ownership(a)</b>
Kaushik Dave, PhD	373,667(1)	1.0%
Dragan Cicic, MD	408,525(2)	1.1%
David Nicholson, PhD	80,930(3)	*0%
Sandesh Seth	252,334(4)	*0%
Richard I. Steinhart	18,982(5)	*0%
Sergio Traversa, Pharm. D.	51,768(6)	*0%
<b>All Directors and Officers as a Group (6 persons)</b>	<b>1,186,206</b>	<b>3.3%</b>
<b>All other 5% holders</b>		
Actinium Holdings Ltd. (7) c/o Sterling Management Limited P.O. Box HM 1029 Hamilton HM CX	5,702,387	15.8%

\* less than 1%

(a) Based on 35,482,076 shares of Common Stock outstanding as of March 16, 2015, and includes 400,000 shares of common stock of the Company that remained outstanding after the closing of the Share Exchange.

(1) Options to purchase an aggregate of 675,000 shares of Common Stock of the Company at an exercise price of \$6.70 per share and options to purchase an aggregate of 150,000 shares of Common Stock of the Company at an exercise price of \$3.58 per share. Within 60 days of March 16, 2015, 249,000 options will have vested. Includes 124,667 shares of common stock.

(2) Options granted to purchase an aggregate of 333,000 shares of Common Stock of the Company at an exercise price of \$0.784 per share, options to purchase an aggregate of 99,900 shares of Common Stock of the Company at an exercise price of \$1.50 per share, options to purchase an aggregate of 81,784 shares of Common Stock of the Company at an exercise price of \$1.35 per share and options to purchase an aggregate of 350,000 shares of Common Stock of the Company at an exercise price of \$3.58 per share. All options are subject to vesting. Within 60 days of March 16, 2015, 405,025 options will have vested. Includes 3,500 shares of common stock.

(3) Options to purchase an aggregate of 49,950 shares of Common Stock of the Company at an exercise price of \$0.784 per share and options to purchase an aggregate of 49,950 shares of Common Stock of the Company at an exercise price of \$1.50 per share. On February 18, 2015, Mr. Nicholson was granted 25,000 options with an exercise price of \$3.58 per share. All options are subject to vesting. Within 60 days of March 16, 2015, 70,930 options will have vested. Includes 10,000 shares of common stock.

(4) Warrants to purchase an aggregate of 64,747 shares of Common Stock of the Company at an exercise price of \$0.784 per share, exercisable on a cashless basis and warrants to purchase an aggregate of 99,617 of Common Stock of the Company at an exercise price of \$0.784 per share, exercisable on a cashless basis issued to Amrosan, LLC, a partnership in which the majority member interest is owned by the family of Mr. Seth. Excludes warrants to purchase an aggregate of 375,556 shares of Common Stock of the Company at par value per share, exercisable on a cashless basis issued to Amrosan, LLC as the warrants are not exercisable upon less than 90 days' notice. The holder may waive the 90 day exercise notice requirement by giving 65 days prior notice of such waiver. The shares available by exercise of this Warrant are also restricted and may not be sold or otherwise transferred until the earlier of twelve months from December 28, 2012, the closing date of the going Share Exchange; or for six months after the Registration Statement of which this prospectus is a part is declared effective. Excludes 353,023 warrants issued to Carnegie Hill Asset Partners and irrevocable trust linked to Mr. Seth's family and 721,068 warrants issued to Bioche Asset Management, LLC, a partnership in which the majority member interest is owned by the family of Mr. Seth whose terms are the same as those issued to Amrosan LLC. Also excludes warrants held by the Placement Agent or its affiliates in connection with the offering of common stock and Series A and Series B warrants that closed on December 19, 2012 (the "2012 Offering"), the Bridge Notes Financing, the Series E financing and by designees of Jamess Capital Group, LLC in connection with the Share Exchange. Also includes options to purchase an aggregate of 49,950 shares of Common Stock of the Company at an exercise price of \$1.50 per share. Mr. Seth was granted 280,000 options on September 23, 2014 with an exercise price of \$6.13 per share. On February 18, 2015, Mr. Seth was granted 150,000 options with an exercise price of \$3.58 per share. All options are subject to vesting. Within 60 days of March 11, 2015, 77,970 options will have vested. Includes 10,000 shares of common stock.

(5) Options to purchase an aggregate of 49,950 shares of Common Stock of the Company at an exercise price of \$6.70 per share, On February 18, 2015, Mr. Steinhart was granted 25,000 options with an exercise price of \$3.58 per share. All options are subject to vesting. Within 60 days of March 16, 2015, 18,982 options will have vested.

(6) Options to purchase an aggregate of 49,950 shares of Common Stock of the Company at an exercise price of \$1.50 per share. Options to purchase an aggregate of 20,000 shares of Common Stock of the Company at an exercise price of \$3.60 per share. On February 18, 2015, Mr. Traversa was granted 25,000 options with an exercise price of \$3.58 per share. All options are subject to vesting. Within 60 days of March 11, 2015, 41,768 options will have vested.

(7) Actinium Holdings Ltd., a Bermuda corporation ("AHL"), has entered the Share Exchange and a related Lock-up Agreement and is the record holder of the number of shares of Common Stock of the Company listed opposite its name. Michael Sheffrey has sole voting and investment power over the securities beneficially owned by Actinium Holdings Ltd. AHL is wholly owned by AHLB Holdings, LLC ("AHLB"), which in turn, is wholly owned by MSKCC. AHL, AHLB and MSKCC may be deemed to share investment and voting power and beneficial ownership of such shares. AHL is entitled to certain demand and "piggyback" registration rights with respect to its shares of Common Stock. The shares to be registered by AHL will, however, in certain circumstances, be subject to "cutback" (or reduction of the number of shares includible in an underwritten registration) prior to the "cutback" of the shares being registered on behalf of investors in certain recent private placements of the Company.

## **ITEM 13. CERTAIN RELATIONSHIPS AND RELATED TRANSACTIONS, AND DIRECTOR INDEPENDENCE**

### **Transactions with Related Persons**

On September 4, 2013, the Company entered into a letter agreement with SKI to set forth the amount that the Company owes SKI for the period from 2011 to 2014 under the License Agreement. The total amount that the Company owes SKI for the period of 2011 to 2014 is \$815,100 plus all relevant licensed intellectual property related pass through costs to be determined. The amount owed does not include amounts the Company may owe for patent expenses under the License Agreement (as defined above). For the year ended December 31, 2014, the Company incurred \$184,556 fees related to this letter agreement.

AHL has agreed not to transfer its shares of Common Stock, subject to exceptions for certain related-party transfers, transfers to trusts and other private transfers, until, in general, the earlier of (i) December 28, 2013 (the first anniversary of the closing date of the Share Exchange); or (ii) six (6) months following the effective date of the Registration Statement of which this prospectus is a part. AHL will be entitled to certain demand and "piggyback" registration rights with respect to the shares of Common Stock that it may acquire. The shares to be registered by AHL will, however, in certain circumstances, be subject to "cutback" (or reduction of the number of shares includible in an underwritten registration) prior to the "cutback" of the shares being registered on behalf of investors in certain recent private placements.

On December 9, 2013, the Company entered into an engagement agreement with Laidlaw & Company (UK) Ltd. (the “Placement Agent”) for the December 2013 Offering, of which Mr. Seth, Executive Chair of the Company, is Head of Healthcare Investment Banking. Pursuant to the agreement, the Placement Agent was engaged as the exclusive agent for the December 2013 Offering. In consideration for its services, the Placement Agent received (a) a cash fee equal to 10% of the gross proceeds raised in the December 2013 Offering, and (b) a non-accountable expense reimbursement equal to 2% of the gross proceeds raised in the December 2013 Offering. The Placement Agent or its designees have also received warrants to purchase shares of the Company’s Common Stock in an amount equal to 10% of the shares of Common Stock issued as part of the Units sold in the December 2013 Offering and the shares of Common Stock issuable upon exercise of the common stock warrants included in such Units. The Placement Agent will also receive the same fee and expense schedule for any cash exercise of Warrants within 6 months of the final closing of the December 2013 Offering and a 5% solicitation fee for any Warrants exercised as a result of being called for redemption by the Company. Upon the final closing of the December 2013 Offering the Placement Agent has been engaged by the Company to provide certain financial advisory services to the Company for a period of 6 months, unless extended by mutual consent between the Company and the Placement Agent for a monthly fee of \$25,000. The agreement also provided that (i) if the Company consummates any merger, acquisition, business combination or other transaction (other than the Share Exchange) with any party introduced to it by the Placement Agent, the Placement Agent would receive a fee equal to 10% of the aggregate consideration in such transactions, and (ii) if, within a period of 12 months after termination of the advisory services described above, the Company requires a financing or similar advisory transaction the Placement Agent will have the right to act as the Company’s financial advisor and investment banker in such financing or transaction pursuant to a set fee schedule set forth in the December 9, 2013 engagement agreement. As of December 31, 2014, the Company owed Laidlaw & Company (UK) Ltd \$25,000. The agreement was terminated in June 2014.

On July 10, 2014, the Company completed a public offering that totaled 1,827,123 common shares, representing gross proceeds of approximately \$13.7 million and a net amount of approximately \$12.6 million after deducting the underwriting discount and the other offering expenses. Laidlaw & Company (UK) Ltd. acted as lead manager. The offering was made pursuant to a shelf registration statement (File No. 333-194768) previously filed with and declared effective by the U.S. Securities and Exchange Commission.

On February 11, 2015 the Company completed a public offering that totaled 4,444,444 common shares and warrants to purchase an aggregate of 3,333,333 shares of common stock at a combined price to the public of \$4.50, representing gross proceeds of approximately \$20.0 million and a net amount of approximately \$18.5 million after deducting the underwriting discount and the other offering expenses. Laidlaw & Company (UK) Ltd. acted as sole book-running manager for the offering. The offering was made pursuant to a shelf registration statement (File No. 333-194768) previously filed with and declared effective by the U.S. Securities and Exchange Commission.

In an agreement dated March 11, 2015 and effective August 11, 2014, our Chairman of the Board entered into a consulting agreement with the Company to serve as Executive Chairman of the Company. The Executive Chairman will be paid an annual consulting fee of \$350,000. During the term of this agreement, the annual consulting fee shall be maintained at least at the same amount as the annual salary of the Chief Executive Officer of the Company. The Executive Chairman is also entitled to participate in a Company bonus program, which shall be established by the Board pursuant to which the Board shall award bonuses to the consultant, based upon the achievement of written individual and corporate objectives such as the Board shall determine. During the term of the agreement, the performance cash bonus shall be at least at the same amount as the performance cash bonus paid to the Chief Executive Officer of the Company. On September 23, 2014, the Board also granted to the Executive Chairman an option to purchase 280,000 common shares of the Company at an exercise price of \$6.13 per share. The options vest at the rate of 2% of the grant each month from the grant Date until fully vested in accordance with the provisions of the Company’s Amended and Restated 2013 Stock Plan. The Executive Chairman shall also be awarded stock option and/or restricted stock grants at least at the same amount as such stock option and/or restricted stock that is granted to the Chief Executive Officer of the Company. As of March 16, 2015, the executive Chairman has not been paid under this agreement.

#### Non-Competition Agreements

Our executive officers have signed non-competition agreements, which provide that all inventions become the immediate property of API and require invention assignments. The agreements provide that the executive officers will hold proprietary information in the strictest confidence and not use the confidential information for any purpose not expressly authorized by us.

#### ITEM 14. PRINCIPAL ACCOUNTANT FEES AND SERVICES

The aggregate fees billed for the fiscal years ended December 31, 2014 and 2013 for professional services rendered by GBH CPAs, PC for the audits of the Company’s annual financial statements included in Form 10-K (“Audit Fees”), tax compliance, advice, and planning (“Tax Fees”), and other products or services provided (“Other Fees”):

	Year Ended December 31, 2014	Year Ended December 31, 2013
Audit Fees	\$ 134,850	\$ 109,487
Audit – Related Fees	-	-
Tax Fees	-	-
All Other Fees	-	-
<b>Total</b>	<b>\$ 134,850</b>	<b>\$ 109,487</b>

#### Pre-Approval Policy

In 2013, the Audit Committee adopted policies and procedures for the pre-approval of audit and non-audit services performed by the independent registered public accountants pursuant to which the Audit Committee generally is required to pre-approve the audit and permissible non-audit services performed by the independent registered public accountants in order to ensure that the provision of such services does not impair the registered accountants' independence.

**PART IV**

**ITEM 15. EXHIBITS, FINANCIAL STATEMENT SCHEDULES**

<b>Exhibit Number</b>	<b>Description</b>
2.1	Share Exchange Agreement, dated December 28, 2012, by and among Cactus Ventures, Inc., Actinium Pharmaceuticals, Inc., Diane S. Button, and the shareholders of Actinium Pharmaceuticals, Inc. (incorporated by reference to Exhibit 2.1 to Form 8-K filed on January 2, 2013).
2.2	Share Exchange Agreement, dated March 11, 2013, by and among Cactus Ventures, Inc., Actinium Pharmaceuticals, Inc., and the shareholders of Actinium Pharmaceuticals, Inc. (incorporated by reference to Exhibit 10.1 to Form 8-K filed on March 11, 2013).
2.3	Share Exchange Agreement, dated August 22, 2013, by and among Actinium Pharmaceuticals, Inc., Actinium Corporation, and the shareholders of Actinium Corporation (incorporated by reference to Exhibit 2.3 to Form S-1/A filed on August 22, 2013).
3.1	Articles of Incorporation of Actinium Pharmaceuticals, Inc. (incorporated by reference to Exhibit 3.1 of the Company's Form 8-K filed with the SEC on April 17, 2013).
3.2	Fifth Restated Certificate of Incorporation of Actinium Corporation (fka, Actinium Pharmaceuticals, Inc.) (incorporated by reference to Exhibit 3.5 to Form 8-K filed on January 2, 2013).
3.3	Bylaws of Actinium Pharmaceuticals, Inc. (incorporated by reference to Exhibit 3.2 of the Company's Form filed with the SEC on April 17, 2007).
3.4	Bylaws of Actinium Corporation (fka, Actinium Pharmaceuticals, Inc.) (incorporated by reference to Exhibit 3.7 to Form 8-K filed on January 2, 2013).
3.5	Certificate of Amendment to Articles of Incorporation filed January 7, 2014 (incorporated by reference to Exhibit 3.5 to Form S-1 filed on January 31, 2014).
3.6	Certificate of Amendment to Articles of Incorporation filed February 3, 2014. (incorporated by reference to Exhibit 3.1 to Form 8-K filed on February 7, 2014).
3.7	Certificate of Amendment to Articles of Incorporation filed February 26, 2015.
4.1	Form of A Warrant, dated December 19, 2012 (incorporated by reference to Exhibit 4.1 to Form 8-K filed on January 2, 2013).
4.2	Form of B Warrant, dated December 19, 2012 (incorporated by reference to Exhibit 4.2 to Form 8-K filed on January 2, 2013).
4.3	Form of Lock Up Agreement, dated December 2012 (incorporated by reference to Exhibit 4.3 to Form 8-K filed on January 2, 2013).
4.4	Lock-up Agreement, dated August 22, 2013 (incorporated by reference to Exhibit 4.7 to Form S-1/A filed on August 22, 2013).
4.5	Form of Common Stock Warrant, dated December 27, 2013 and January 10, 2014 (incorporated by reference to Exhibit 4.8 to Form S-1 filed on January 31, 2013).
4.6	Form of Lock-Up Agreement, dated December 27, 2013 (incorporated by reference to Exhibit 4.9 to Form S-1 filed on January 31, 2014).
4.7	Form of Warrant (incorporated by reference to Exhibit 4.1 to Form 8-K filed on February 6, 2015).
10.1	Registration Rights Agreement, by and among Actinium Pharmaceuticals, Inc., General Atlantic Investments Limited, and Certain Stockholders, dated June 30, 2000 (incorporated by reference to Exhibit 10.1 to Form 8-K filed on January 2, 2013).
10.2	Amendment No. 1 to June 30, 2000 Registration Rights Agreement, dated September 29, 2011 (incorporated by reference to Exhibit 10.2 to Form 8-K/A filed on January 4, 2013).
10.3	First Amended and Restated Stockholders Agreement, by and among Actinium Pharmaceuticals, Inc., Actinium Holdings Limited, N.V. Organon, and the Stockholders Listed Therein, dated October 5, 2011 (incorporated by reference to Exhibit 10.3 to Form 8-K/A filed on January 4, 2013).
10.4	Second Amended and Restated Investor Rights Agreement, by and among Actinium Pharmaceuticals, Inc., Actinium Holdings Limited, and the Investors Listed Therein, dated October 5, 2011 (incorporated by reference to Exhibit 3.5 to Form 8-K filed on January 4, 2013).
10.5	Intentionally left blank.
10.6	Form of Subscription Agreement, dated December 19, 2012 (incorporated by reference to Exhibit 10.6 to Form 8-K filed on January 2, 2013).
10.7	Form of Unit Purchase Agreement, dated December 19, 2012 (incorporated by reference to Exhibit 10.7 to Form 8-K filed on January 2, 2013).
10.8	Employment Agreement, dated January 2, 2006, between Actinium Pharmaceuticals, Inc. and Dragan Cicic (incorporated by reference to Exhibit 10.8 to Form 8-K/A filed on January 4, 2013).
10.9	License, Development and Commercialization Agreement between Sloan-Kettering Institute of Cancer Research, and Actinium Pharmaceuticals, Inc., dated February 11, 2002; as amended by the First Amendment dated August 7, 2006 (incorporated by reference to Exhibit 10.9 to Form 8-K/A filed on January 4, 2013).
10.10	Phase 1/2 Study on the safety and efficiency of 225ACAc-HuM195 in patients with advanced Myeloid malignancies with Millennix Oncology, Averion Project, dated December 6, 2006 (incorporated by reference to Exhibit 3.5 to Form 8-K filed on January 4, 2013).
10.11	Product Development and Patent License Agreement, dated February 27, 2003, by and between AbbVie Biotherapeutics and Actinium Pharmaceuticals, Inc. (incorporated by reference to Exhibit 10.11 to Form 8-K/A filed on January 4, 2013).

- 10.12 Clinical Trial Agreement, dated July 19, 2012, by and between Fred Hutchinson Cancer Center and Actinium Pharmaceuticals, Inc. (incorporated by reference to Exhibit 10.12 to Form 8-K/A filed on January 4, 2013).
- 10.13 Employment Letter between Jack V. Talley and Actinium Pharmaceuticals, Inc., effective August 15, 2012 (incorporated by reference to Exhibit 3.5 to Form 8-K filed on January 4, 2013).
- 10.14 Employment Letter between Enza Guagenti and Actinium Pharmaceuticals, Inc., effective August 15, 2012 (incorporated by reference to Exhibit 10.14 to Form 8-K/A filed on January 4, 2013).
- 10.15 Clinical Trial Agreement, dated January 18, 2001, between Actinium Pharmaceuticals, Inc. and Memorial Sloan Kettering Cancer Center for the purpose of conducting a clinical trial entitled "Phase 1/2 trial of 213Bi-M195 and cytarabine for Acute Myeloid Leukemia." (incorporated by reference to Exhibit 10.15 to Form 8-K/A filed on January 4, 2013).
- 10.16 Clinical Trial Agreement with The Trustees of the University of Pennsylvania, dated November 8, 2012 (incorporated by reference to Exhibit 10.16 to Form 8-K/A filed on January 4, 2013).
- 10.17 Clinical Trial Agreement, dated March 27, 2012, with Memorial Sloan-Kettering Cancer Center (incorporated by reference to Exhibit 10.17 to Form 8-K/A filed on January 4, 2013).
- 10.18 Clinical Trial Agreement, dated September 22, 2012, with Johns Hopkins University, dated September 24, 2012 (incorporated by reference to Exhibit 10.18 to Form 8-K/A filed on January 4, 2013).
- 10.19 License Agreement, dated June 14, 2012, for BC8 antibody with Fred Hutchinson Cancer Research Center (incorporated by reference to Exhibit 10.19 to Form 8-K/A filed on January 4, 2013).
- 10.20 2012 Unit Investor Rights Agreement, dated December 19, 2012, by and among Actinium Pharmaceuticals, Inc., the persons identified on Exhibit A attached thereto hereto, and the Placement Agent (incorporated by reference to Exhibit 10.20 to Form 8-K/A filed on January 4, 2013).
- 10.21 Project Agreement, dated September 30, 2011, between Actinium Pharmaceuticals, Inc. and Aptiv Solutions, Inc. (incorporated by reference to Exhibit 10.21 to Form 8-K/A filed on January 4, 2013).
- 10.22 Proposal, dated March 30, 2007, with IsoTherapeutics Group, LLC (incorporated by reference to Exhibit 10.22 to Form 8-K/A filed on January 4, 2013).
- 10.23 Clinical Trial Agreement with The University of Texas M.D. Anderson Cancer, dated March 1, 2012 (incorporated by reference to Exhibit 10.23 to Form 8-K/A filed on January 4, 2013).
- 10.24 Amendment No. 1 to Research Agreement, dated November 7, 2012, between Actinium Pharmaceuticals, Inc. and The University of Texas M.D. Anderson Cancer (incorporated by reference to Exhibit 10.24 to Form 8-K/A filed on January 4, 2013).
- 10.25 Letter Agreement, dated June 19, 2011, between Actinium Pharmaceuticals, Inc. and Sloan-Kettering Institute for Cancer Research (incorporated by reference to Exhibit 10.25 to Form 8-K/A filed on January 4, 2013).
- 10.26 Letter Agreement, dated April 9, 2010, between Actinium Pharmaceuticals, Inc. and Sloan-Kettering Institute for Cancer Research (incorporated by reference to Exhibit 10.26 to Form 8-K/A filed on January 4, 2013).
- 10.27 Letter Agreement, dated July 2010, between Actinium Pharmaceuticals, Inc. and Actinium Holdings Limited (Waiver of Anti-Dilution Rights) (incorporated by reference to Exhibit 10.27 to Form 8-K/A filed on January 4, 2013).
- 10.28 Clinical Trial Agreement, dated April 12, 2006, with Sloan-Kettering Institute for Cancer Research and Memorial Hospital for Cancer and Allied Diseases (incorporated by reference to Exhibit 10.28 to Form 8-K /A filed on January 4, 2013).
- 10.29 Letter Agreement, dated \_\_, 2011, between Actinium Pharmaceuticals, Inc. and Actinium Holdings Limited (Waiver of Registration Rights) (incorporated by reference to Exhibit 10.29 to Form 8-K/A filed on January 4, 2013).
- 10.30 Agreement, dated November 29, 2012, by and between Oak Ridge National Laboratory and Actinium Pharmaceuticals, Inc. (incorporated by reference to Exhibit 10.30 to Form S-1/A filed on August 22, 2013).
- 10.31 Transaction Management Agreement, dated May 9, 2011, by and between Jamess Capital Group, LLC (fka, AmerAsia Capital Group LLC) and Actinium Corporation (fka, Actinium Pharmaceuticals Inc.) (incorporated by reference to Exhibit 10.31 to Form S-1 filed on September 30, 2013).
- 10.32 Employment Agreement, effective September 16, 2013, by and between Actinium Pharmaceuticals, Inc. and Kaushik J. Dave (incorporated by reference to Exhibit 10.32 to Form S-1/A filed on October 28, 2013).
- 10.33 Actinium Pharmaceuticals, Inc. Amended and Restated 2013 Stock Plan (incorporated by reference to Exhibit 10.33 to Form S-1 filed on January 31, 2014).
- 10.34 Actinium Pharmaceuticals, Inc. Amended and Restated 2013 Equity Incentive Plan (incorporated by reference to Exhibit 10.34 to Form S-1 filed on January 31, 2014).
- 10.35 Form of Unit Purchase Agreement, dated December 27, 2013 and January 10, 2014 (incorporated by reference to Exhibit 10.35 to Form S-1 filed on January 31, 2014).
- 10.36 Form of Subscription Agreement, dated December 27, 2013 and January 10, 2014 (incorporated by reference to Exhibit 10.36 to Form S-1 filed on January 31, 2014).
- 10.37 Form of Registration Rights Agreement, dated December 27, 2013 and January 10, 2014 (incorporated by reference to Exhibit 10.37 to Form S-1 filed on January 31, 2014).
- 10.38 Letter Agreement, dated September 4, 2013, between Actinium Pharmaceuticals, Inc. and Sloan-Kettering Institute for Cancer Research (incorporated by reference to Exhibit 10.38 to Form S-1 filed on January 31, 2014).
- 10.39 At-the-Market Issuance Sales Agreement, dated March 24, 2014, by and between Actinium Pharmaceuticals, Inc. and MLV & Co. LLC (incorporated herein by reference to Exhibit 1.2 to Actinium's Registration Statement on Form S-3 filed March 24, 2014).
- 10.40 Underwriting Agreement, dated June 25, 2014, by and between Canaccord Genuity Inc. and Actinium Pharmaceuticals, Inc (incorporated by reference to Exhibit 1.1 to Form 8-K filed on June 25, 2014).
- 10.41 Underwriting Agreement, dated June 25, 2014, by and between Laidlaw & Company (UK) Ltd. and Actinium Pharmaceuticals, Inc (incorporated by reference to Exhibit 1.1 to Form 8-K filed on February 6, 2015).
- 10.42 Actinium Pharmaceuticals, Inc. Amended and Restated 2013 Stock Plan.
- 10.43 Consulting Agreement by and between Actinium Pharmaceuticals, Inc. and the Executive Chairman.
- 10.44 Actinium Pharmaceuticals, Inc. Amended and Restated 2013 Equity Incentive Plan.



14.1	Code of Ethics (incorporated by reference to Exhibit 14.1 to Form 8-K filed on January 2, 2013).
21.1	List of Subsidiaries.
23.1	Consent of GBH CPAs, PC.
31.1	Certification of Principal Executive Officer, pursuant to 18 U.S.C. Section 1350 as adopted pursuant to Section 302 of the Sarbanes-Oxley Act of 2002.
31.2	Certification of Principal Financial and Accounting Officer, pursuant to 18 U.S.C. Section 1350 as adopted pursuant to Section 302 of the Sarbanes-Oxley Act of 2002.
32.1*	Certification of Principal Executive Officer, pursuant to 18 U.S.C. Section 1350 as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002.
32.2*	Certification of Principal Financial and Accounting Officer, pursuant to 18 U.S.C. Section 1350 as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002.
101.INS **	XBRL Instance Document
101.SCH **	XBRL Taxonomy Schema
101.CAL **	XBRL Taxonomy Calculation Linkbase
101.DEF **	XBRL Taxonomy Definition Linkbase
101.LAB **	XBRL Taxonomy Label Linkbase
101.PRE **	XBRL Taxonomy Presentation Linkbase

\*In accordance with SEC Release 33-8238, Exhibit 32.1 is being furnished and not filed.

\*\* Furnished herewith. XBRL (Extensible Business Reporting Language) information is furnished and not filed or a part of a registration statement or prospectus for purposes of Sections 11 or 12 of the Securities Act of 1933, as amended, is deemed not filed for purposes of Section 18 of the Securities Exchange Act of 1934, as amended, and otherwise is not subject to liability under these sections.

## SIGNATURES

Pursuant to the requirements of the Securities Exchange Act of 1934, this report has been signed below by the following person on behalf of the Registrant.

Dated: March 16, 2015

**ACTINIUM PHARMACEUTICALS, INC.**

By: /s/ Kaushik J. Dave  
Kaushik J. Dave  
President, Chief Executive Officer and Interim  
Chief Financial Officer  
(Duly Authorized Officer, Principal Executive  
Officer and Principal Financial and Accounting  
Officer)

Pursuant to the requirements of the Securities Exchange Act of 1934, this report has been signed below by the following person on behalf of the Registrant and in the capacities and on the dates indicated.

<u>Signature</u>	<u>Title</u>	<u>Date</u>
<u>/s/ Kaushik J. Dave</u> Kaushik J. Dave	President, Chief Executive Officer, Interim Chief Financial Officer and Director (Principal Executive Officer and Principal Financial and Accounting Officer)	March 16, 2015
<u>/s/ Sandesh Seth</u> Sandesh Seth	Director (Chairman of the Board)	March 16, 2015
<u>/s/ David Nicholson</u> David Nicholson	Director	March 16, 2015
<u>/s/ Richard I. Steinhart</u>	Director	March 16, 2015
<u>/s/ Sergio Traversa</u> Sergio Traversa	Director	March 16, 2015

**Delaware**

*The First State*

**I, JEFFREY W. BULLOCK, SECRETARY OF STATE OF THE STATE OF DELAWARE, DO HEREBY CERTIFY THE ATTACHED IS A TRUE AND CORRECT COPY OF THE CERTIFICATE OF AMENDMENT OF "ACTINIUM PHARMACEUTICALS, INC.", FILED IN THIS OFFICE ON THE TWENTY-SIXTH DAY OF FEBRUARY, A.D. 2015, AT 10:31 O'CLOCK A.M.**

**A FILED COPY OF THIS CERTIFICATE HAS BEEN FORWARDED TO THE NEW CASTLE COUNTY RECORDER OF DEEDS.**

**5306858 8100  
150269289**

*You may verify this certificate online at  
[corp.delaware.gov/authver.shtml](http://corp.delaware.gov/authver.shtml)*



A handwritten signature in black ink, appearing to read "J. Bullock", written over a horizontal line.

Jeffrey W. Bullock, Secretary of State  
**AUTHENTICATION: 2154628  
DATE: 02-26-15**



**ACTINIUM PHARMACEUTICALS, INC.**  
**Amended and Restated Stock Plan**

1. **Purposes of the Plan.** The purposes of this Amended and Restated Stock Plan of the Company (the “Plan”) are to attract and retain the best available personnel for positions of substantial responsibility, to provide additional incentive to Employees, Directors and Consultants and to promote the success of the Company’s business. To achieve these purposes, the Company may grant Incentive Stock Options or Nonstatutory Stock Options, as determined by the Administrator at the time of grant of an option and subject to the applicable provisions of Section 422 of the Code and the regulations promulgated thereunder, or the Company may grant Stock Purchase Rights, all in accordance with the terms and conditions of the Plan.

The Plan was originally adopted by the Board on November 8, 2013 as the Amended and Restated 2013 Stock Plan, and was approved by the stockholders of the Company on December 23, 2013.

The amendments made to the Plan shall affect only Option and Restricted Stock awards granted on or after the Effective Date. Awards granted prior to the Effective Date shall be governed by the terms of the Plan and the related Option Agreements or Restricted Stock Purchase Agreements as in effect prior to the Effective Date. In the event that the Plan is not approved by the stockholders of the Company, this Amended and Restated Stock Plan of the Company shall be null and void and of no force or effect, but the 2013 Stock Plan then in effect and the Options and Stock Purchase Rights granted thereunder shall remain in full force and effect.

2. **Definitions.** As used herein, the following definitions shall apply:

(a) **“Administrator”** means the Board or its Committee appointed pursuant to Section 4 of the Plan.

( b ) **“Affiliate”** means an entity other than a Subsidiary (as defined below) which, together with the Company, is under common control of a third person or entity.

( c ) **“Applicable Laws”** means the legal requirements relating to the administration of stock option and restricted stock purchase plans under applicable U.S. state corporate laws, U.S. federal laws and other applicable state laws, the Code and regulations thereunder, any Stock Exchange rules or regulations and the applicable laws of any other country or jurisdiction where Options or Stock Purchase Rights are granted under the Plan, as such laws, rules, regulations and requirements shall be in place from time to time.

(d) **“Board”** means the Board of Directors of the Company.

( e ) **“Change of Control”** means a sale of all or substantially all of the Company’s assets, or any merger, consolidation or other transaction of the Company with or into another corporation, entity or person, other than a transaction in which the holders of at least a majority of the shares of capital stock of the Company outstanding immediately prior to such transaction continue to hold (either by the voting securities remaining outstanding or by their being converted into voting securities of the surviving entity) a majority of the total voting power represented by the voting securities of the Company, or such surviving entity, outstanding immediately after such transaction.

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- (f) **“Code”** means the Internal Revenue Code of 1986, as amended.
- ( g ) **“Committee”** means one or more committees or subcommittees of the Board appointed by the Board to administer the Plan in accordance with Section 4 below.
- (h) **“Common Stock”** means the Common Stock of the Company.
- (i) **“Company”** means Actinium Pharmaceuticals, Inc., a Delaware corporation.
- ( j ) **“Consultant”** means any person, including an advisor, who is engaged by the Company or any Parent, Subsidiary or Affiliate to render services and is compensated for such services, and any director of the Company whether compensated for such services or not.
- (k) **“Continuous Service Status”** means the absence of any interruption or termination of service as an Employee or Consultant since the date of grant of the Option. Continuous Service Status as an Employee or Consultant shall not be considered interrupted in the case of: (i) sick leave; (ii) military leave; (iii) any other leave of absence approved by the Administrator, provided that such leave is for a period of not more than three (3) months, or if longer, so long as the individual’s right to reemployment is guaranteed by contract or statute; or (iv) in the case of transfers between locations of the Company or between the Company, its Parents, Subsidiaries, Affiliates or their respective successors. A change in status from an Employee to a Consultant or from a Consultant to an Employee will not constitute an interruption of Continuous Service.
- ( l ) **“Corporate Transaction”** means a sale of all or substantially all of the Company’s assets, or a merger, consolidation or other capital reorganization or transaction of the Company with or into another corporation, entity or person, and includes a Change of Control.
- (m) **“Director”** means a member of the Board.
- (n) **“Effective Date”** means the date the Plan is approved by the stockholders of the Company.
- (o) **“Employee”** means any person employed by the Company or any Parent, Subsidiary or Affiliate, with the status of employment determined based upon such factors as are deemed appropriate by the Administrator in its discretion, subject to any requirements of the Code or the Applicable Laws. The payment by the Company of a director’s fee to a Director shall not be sufficient to constitute “employment” of such Director by the Company.
- (p) **“Exchange Act”** means the Securities Exchange Act of 1934, as amended.

(q) **“Fair Market Value”** means, as of any date, per share of Common Stock, the closing price on the business day immediately preceding such date for the Common Stock on the NYSE MKT or, if applicable, principal securities exchange on which the shares of Common Stock are then traded, or, if not traded, the price set by the Administrator.

(r) **“Incentive Stock Option”** means an Option intended to qualify as an incentive stock option within the meaning of Section 422 of the Code, as designated in the applicable Option Agreement.

( s ) **“Nonstatutory Stock Option”** means an Option not intended to qualify as an Incentive Stock Option, as designated in the applicable Option Agreement, or that otherwise does not meet the requirements of an Incentive Stock Option.

(t) **“Option”** means a stock option granted pursuant to the Plan.

( u ) **“Option Agreement”** means a written document, substantially in the form attached hereto as Attachment A, reflecting the terms of an Option granted under the Plan and includes any documents attached to or incorporated into such Option Agreement, including, but not limited to, a notice of stock option grant and a form of exercise notice.

(v) **“Option Exchange Program”** means a program approved by the Administrator whereby outstanding Options are exchanged for Options with a lower exercise price or are amended to decrease the exercise price as a result of a decline in the Fair Market Value of the Common Stock.

(w) **“Optioned Stock”** means the Common Stock subject to an Option.

(x) **“Optionee”** means an Employee, Director or Consultant who receives an Option.

(y) **“Parent”** means a “parent corporation,”, whether now or hereafter existing, as defined in Section 424(e) of the Code, or any successor provision.

( z ) **“Participant”** means any holder of one or more Options or Stock Purchase Rights, or the Shares issuable or issued upon exercise of such awards, under the Plan.

(aa) **“Reporting Person”** means an officer, Director, or greater than ten percent stockholder of the Company within the meaning of Rule 16a-2 under the Exchange Act, who is required to file reports pursuant to Rule 16a-3 under the Exchange Act.

( b b ) **“Restricted Stock”** means Shares of Common Stock acquired pursuant to a grant of a Stock Purchase Right under Section 11 below.

(cc) **“Restricted Stock Purchase Agreement”** means a written document, the form(s) of which shall be approved from time to time by the Administrator, reflecting the terms of a Stock Purchase Right granted under the Plan and includes any documents attached to such agreement.

(dd) “**Rule 16b-3**” means Rule 16b-3 promulgated under the Exchange Act, as amended from time to time, or any successor provision.

(ee) “**Share**” means a share of the Common Stock, as adjusted in accordance with Section 14 of the Plan.

(ff) “**Stock Exchange**” means any stock exchange or consolidated stock price reporting system on which prices for the Common Stock are quoted at any given time.

(gg) “**Stock Purchase Right**” means the right to purchase Common Stock pursuant to Section 11 below.

( h h ) “**Subsidiary**” means a “subsidiary corporation,” whether now or hereafter existing, as defined in Section 424(f) of the Code, or any successor provision.

( i i ) “**Ten Percent Holder**” means a person who owns stock representing more than ten percent (10%) of the voting power of all classes of stock of the Company or any Parent or Subsidiary.

3 . **Stock Subject to the Plan.** Subject to the provisions of Section 14 of the Plan, the maximum aggregate number of Shares reserved for issuance to Participants under the Plan is 5,750,000, and the maximum aggregate number of Shares that may be granted in the form of Incentive Stock Options is 5,750,000. The Shares may be authorized, but unissued, or reacquired Common Stock. If an award should expire or become unexercisable for any reason without having been exercised in full, or is surrendered pursuant to an Option Exchange Program, the unpurchased Shares that were subject thereto shall, unless the Plan shall have been terminated, become available for future grant under the Plan. In addition, any Shares of Common Stock which are retained by the Company upon exercise of an award in order to satisfy the exercise or purchase price for such award or any withholding taxes due with respect to such exercise or purchase shall be treated as not issued and shall continue to be available under the Plan. Shares issued under the Plan and later repurchased by the Company pursuant to any repurchase right which the Company may have shall not be available for future grant under the Plan.

#### 4. **Administration of the Plan.**

(a) **General.** The Plan shall be administered by the Board or a Committee, or a combination thereof, as determined by the Board. The Plan may be administered by different administrative bodies with respect to different classes of Participants and, if permitted by the Applicable Laws, the Board may authorize one or more officers to make awards under the Plan.

(b) **Committee Composition.** If a Committee has been appointed pursuant to this Section 4, such Committee shall continue to serve in its designated capacity until otherwise directed by the Board. From time to time the Board may increase the size of any Committee and appoint additional members thereof, remove members (with or without cause) and appoint new members in substitution therefor, fill vacancies (however caused) and remove all members of a Committee and thereafter directly administer the Plan, all to the extent permitted by the Applicable Laws and, in the case of a Committee administering the Plan in accordance with the requirements of Rule 16b-3 or Section 162(m) of the Code, to the extent permitted or required by such provisions.

(c) **Powers of the Administrator.** Subject to the provisions of the Plan and in the case of a Committee, the specific duties delegated by the Board to such Committee, the Administrator shall have the authority, in its discretion:

- (i) to determine the Fair Market Value of the Common Stock, in accordance with Section 2(q) of the Plan, provided that such determination shall be applied consistently with respect to Participants under the Plan;
- (ii) to select the Employees, Directors and Consultants to whom Plan awards may from time to time be granted;
- (iii) to determine whether and to what extent Plan awards are granted;
- (iv) to determine the number of Shares of Common Stock to be covered by each award granted;
- (v) to approve the form(s) of agreement(s) used under the Plan;
- (vi) to determine the terms and conditions, not inconsistent with the terms of the Plan, of any award granted hereunder, which terms and conditions include but are not limited to the exercise or purchase price, the time or times when awards may be exercised (which may be based on performance criteria), any vesting acceleration or waiver of forfeiture restrictions, any pro-rata adjustment to vesting as a result of a Participant's transitioning from full- to part-time services (or vice versa), and any restriction or limitation regarding any Option, Optioned Stock, Stock Purchase Right or Restricted Stock, based in each case on such factors as the Administrator, in its sole discretion, shall determine;
- (vii) to determine whether and under what circumstances an Option may be settled in cash under Section 10(c) instead of Common Stock;
- (viii) to implement an Option Exchange Program on such terms and conditions as the Administrator in its discretion deems appropriate, provided that no amendment or adjustment to an Option that would materially and adversely affect the rights of any Optionee shall be made without the prior written consent of the Optionee;
- (ix) to adjust the vesting of an Option held by an Employee, Director or Consultant as a result of a change in the terms or conditions under which such person is providing services to the Company;
- (x) to construe and interpret the terms of the Plan and awards granted under the Plan, which constructions, interpretations and decisions shall be final and binding on all Participants; and
- (xi) in order to fulfill the purposes of the Plan and without amending the Plan, to modify grants of Options or Stock Purchase Rights to Participants who are foreign nationals or employed outside of the United States in order to recognize differences in local law, tax policies or customs.

5. **Eligibility.**

(a) **Recipients of Grants.** Nonstatutory Stock Options and Stock Purchase Rights may be granted to Employees, Directors and Consultants. Incentive Stock Options may be granted only to Employees, provided that Employees of Affiliates shall not be eligible to receive Incentive Stock Options.

(b) **Type of Option.** Each Option shall be designated in the Option Agreement as either an Incentive Stock Option or a Nonstatutory Stock Option.

(c) **ISO \$100,000 Limitation.** Notwithstanding any designation under Section 5(b), to the extent that the aggregate Fair Market Value of Shares with respect to which Options designated as Incentive Stock Options are exercisable for the first time by any Optionee during any calendar year (under all plans of the Company or any Parent or Subsidiary) exceeds \$100,000, such excess Options shall be treated as Nonstatutory Stock Options. For purposes of this Section 5(c), Incentive Stock Options shall be taken into account in the order in which they were granted, and the Fair Market Value of the Shares subject to an Incentive Stock Option shall be determined as of the date of the grant of such Option.

(d) **No Employment Rights.** The Plan shall not confer upon any Participant any right with respect to continuation of an employment or consulting relationship with the Company, nor shall it interfere in any way with such Participant's right or the Company's right to terminate his or her employment or consulting relationship at any time or any reason.

6. **Term of Plan.** The Plan shall become effective upon the Effective Date. The duration of the Plan shall not exceed ten (10) years from the earlier of the date the plan is adopted by the Board of Directors or the date the Plan is approved by the stockholders of the Company and may be terminated earlier pursuant to Section 16 of the Plan.

7. **Term of Option.** The term of each Option shall be the term stated in the Option Agreement; provided that the term shall be no more than ten (10) years from the date of grant thereof or such shorter term as may be provided in the Option Agreement and provided further that, in the case of an Incentive Stock Option granted to a person who at the time of such grant is a Ten Percent Holder, the term of the Option shall be five (5) years from the date of grant thereof or such shorter term as may be provided in the Option Agreement.

8. **[Reserved.]**

9. **Option Exercise Price and Consideration.**

(a) **Exercise Price.** The per Share exercise price for the Shares to be issued pursuant to exercise of an Option shall be such price as is determined by the Administrator and set forth in the Option Agreement, but shall be subject to the following:

(i) In the case of an Incentive Stock Option

(A) granted to an Employee who at the time of grant is a Ten Percent Holder, the per Share exercise price shall be no less than 110% of the Fair Market Value per Share on the date of grant; or

(B) granted to any other Employee, the per Share exercise price shall be no less than 100% of the Fair Market Value per Share on the date of grant.

(ii) In the case of a Nonstatutory Stock Option, the exercise price shall be no less than 100% of the Fair Market Value per Share on the date of grant.

(b) **Permissible Consideration.** The consideration to be paid for the Shares to be issued upon exercise of an Option, including the method of payment, shall be determined by the Administrator (and, in the case of an Incentive Stock Option, shall be determined at the time of grant) and may consist entirely of (1) cash; (2) check; (3) delivery of Optionee's promissory note with such recourse, interest, security and redemption provisions as the Administrator determines to be appropriate (subject to applicable provisions of Delaware law); (4) cancellation of indebtedness; (5) other Shares that have a Fair Market Value on the date of surrender equal to the aggregate exercise price of the Shares as to which the Option is exercised, provided that in the case of Shares acquired, directly or indirectly, from the Company, such Shares must have been owned by the Optionee for more than six (6) months on the date of surrender (or such other period as may be required to avoid the Company's incurring an adverse accounting charge); (6) delivery of a properly executed exercise notice together with such other documentation as the Administrator and a securities broker approved by the Company shall require to effect exercise of the Option and prompt delivery to the Company of the sale or loan proceeds required to pay the exercise price and any applicable withholding taxes; or (7) any combination of the foregoing methods of payment. In making its determination as to the type of consideration to accept, the Administrator shall consider if acceptance of such consideration may be reasonably expected to benefit the Company and the Administrator may, in its sole discretion, refuse to accept a particular form of consideration at the time of any Option exercise.

10. **Exercise of Option.**

(a) **General.**

( i ) **Exercisability.** Any Option granted hereunder shall be exercisable at such times and under such conditions as determined by the Administrator, consistent with the term of the Plan and reflected in the Option Agreement, including vesting requirements and/or performance criteria with respect to the Company and/or the Optionee. The Administrator shall have the discretion to determine whether and to what extent the vesting of Options shall be tolled during any unpaid leave of absence; provided however that in the absence of such determination, vesting of Options shall be tolled during any such leave (unless otherwise required by the Applicable Laws). In the event of military leave, vesting shall toll during any unpaid portion of such leave, provided that upon a Participant's return from military leave he or she will be given vesting credit with respect to awards to the same extent as would have applied had the Participant continued to provide services to the Company throughout the leave on the same terms as he or she was providing services immediately prior to the leave.

( i i ) **Minimum Exercise Requirements.** An Option may not be exercised for a fraction of a Share. The Administrator may require that an Option be exercised as to a minimum number of Shares, provided that such requirement shall not prevent an Optionee from exercising the full number of Shares as to which the Option is then exercisable.

( iii ) **Procedures for and Results of Exercise.** An Option shall be deemed exercised when written notice of such exercise has been given to the Company in accordance with the terms of the Option by the person entitled to exercise the Option and the Company has received full payment for the Shares with respect to which the Option is exercised. Full payment may, as authorized by the Administrator, consist of any consideration and method of payment allowable under Section 9(b) of the Plan, provided that the Administrator may, in its sole discretion, refuse to accept any form of consideration at the time of any Option exercise.

Exercise of an Option in any manner shall result in a decrease in the number of Shares that thereafter may be available, both for purposes of the Plan and for sale under the Option, by the number of Shares as to which the Option is exercised.

( iv ) **Rights as Stockholder.** Until the issuance of the Shares (as evidenced by the appropriate entry on the books of the Company or of a duly authorized transfer agent of the Company), no right to vote or receive dividends or any other rights as a stockholder shall exist with respect to the Optioned Stock, notwithstanding the exercise of the Option. No adjustment will be made for a dividend or other right for which the record date is prior to the date the stock certificate is issued, except as provided in Section 14 of the Plan.

( b ) **Termination of Employment or Consulting Relationship.**

( i ) **Termination other than Upon Disability or Death.** In the event of termination of an Optionee's Continuous Service Status, such Optionee may exercise an Option within three (3) months following such termination to the extent the Optionee was vested in the Optioned Stock as of the date of such termination. No termination shall be deemed to occur and this Section 10(b)(i) shall not apply if (A) the Optionee is a Consultant who becomes an Employee, or (B) the Optionee is an Employee who becomes a Consultant.

( ii ) **Disability of Optionee.** In the event of termination of an Optionee's Continuous Service Status as a result of his or her permanent and total disability within the meaning of Section 22(e)(3) of the Code, such Optionee may exercise an Option at any time within one (1) year following such termination to the extent the Optionee was vested in the Optioned Stock as of the date of such termination.

( iii ) **Death of Optionee.** In the event of the death of an Optionee during the period of Continuous Service Status or within three (3) months following termination thereof, the Option may be exercised by Optionee's estate or by a person who acquired the right to exercise the Option by bequest or inheritance at any time within one (1) year following the date of death, but only to the extent the Optionee was vested in the Optioned Stock as of the date of death or, if earlier, the date the Optionee's Continuous Service Status terminated.

( c ) **Buyout Provisions.** The Administrator may at any time offer to buy out for a payment in cash or Shares an Option previously granted under the Plan based on such terms and conditions as the Administrator shall establish and communicate to the Optionee at the time that such offer is made.

11. **Stock Purchase Rights.**

(a) **Rights to Purchase.** When the Administrator determines that it will offer Stock Purchase Rights under the Plan, it shall advise the offeree in writing of the terms, conditions and restrictions related to the offer, including the number of Shares that such person shall be entitled to purchase, the price to be paid, and the time within which such person must accept such offer. The offer to purchase Shares subject to Stock Purchase Rights shall be accepted by execution of a Restricted Stock Purchase Agreement in the form determined by the Administrator.

(b) **Repurchase Option.** Unless the Administrator determines otherwise, the Restricted Stock Purchase Agreement shall grant the Company a repurchase option exercisable upon the voluntary or involuntary termination of the purchaser's employment with the Company for any reason (including death or disability). The purchase price for Shares repurchased pursuant to the Restricted Stock Purchase Agreement shall be the original purchase price paid by the purchaser and may be paid by cancellation of any indebtedness of the purchaser to the Company. The repurchase option shall lapse at such date as the Administrator may determine, as reflected in the Restricted Stock Purchase Agreement.

( c ) **Other Provisions.** The Restricted Stock Purchase Agreement shall contain such other terms, provisions and conditions not inconsistent with the Plan as may be determined by the Administrator in its sole discretion. In addition, the provisions of Restricted Stock Purchase Agreements need not be the same with respect to each purchaser.

( d ) **Rights as a Stockholder.** Once the Stock Purchase Right is exercised, the purchaser shall have the rights equivalent to those of a stockholder, and shall be a stockholder when his or her purchase is entered upon the records of the duly authorized transfer agent of the Company. No adjustment will be made for a dividend or other right for which the record date is prior to the date the Stock Purchase Right is exercised, except as provided in Section 14 of the Plan.

12. **Taxes.**

(a) As a condition of the exercise of an Option or Stock Purchase Right granted under the Plan, the Participant (or in the case of the Participant's death, the person exercising the Option or Stock Purchase Right) shall make such arrangements as the Administrator may require for the satisfaction of any applicable federal, state, local or foreign withholding tax obligations that may arise in connection with the exercise of the Option or Stock Purchase Right and the issuance of Shares. The Company shall not be required to issue any Shares under the Plan until such obligations are satisfied. If the Administrator allows the withholding or surrender of Shares to satisfy a Participant's tax withholding obligations under this Section 12 (whether pursuant to Section 12(c), (d) or (e), or otherwise), the Administrator shall not allow Shares to be withheld in an amount that exceeds the minimum statutory withholding rates for federal and state tax purposes, including payroll taxes.

(b) In the case of an Employee and in the absence of any other arrangement, the Employee shall be deemed to have directed the Company to withhold or collect from his or her compensation an amount sufficient to satisfy such tax obligations from the next payroll payment otherwise payable after the date of an exercise of the Option or Stock Purchase Right.

(c) In the case of Participant other than an Employee (or in the case of an Employee where the next payroll payment is not sufficient to satisfy such tax obligations, with respect to any remaining tax obligations), in the absence of any other arrangement and to the extent permitted under the Applicable Laws, the Participant shall be deemed to have elected to have the Company withhold from the Shares to be issued upon exercise of the Option or Stock Purchase Right that number of Shares having a Fair Market Value determined as of the applicable Tax Date (as defined below) equal to the amount required to be withheld. For purposes of this Section 12, the Fair Market Value of the Shares to be withheld shall be determined on the date that the amount of tax to be withheld is to be determined under the Applicable Laws (the "Tax Date").

(d) If permitted by the Administrator, in its discretion, a Participant may satisfy his or her tax withholding obligations upon exercise of an Option or Stock Purchase Right by surrendering to the Company Shares that have a Fair Market Value determined as of the applicable Tax Date equal to the amount required to be withheld. In the case of shares previously acquired from the Company that are surrendered under this Section 12(d), such Shares must have been owned by the Participant for more than six (6) months on the date of surrender (or such other period of time as is required for the Company to avoid adverse accounting charges).

(e) Any election or deemed election by a Participant to have Shares withheld to satisfy tax withholding obligations under Section 12(c) or (d) above shall be irrevocable as to the particular Shares as to which the election is made and shall be subject to the consent or disapproval of the Administrator. Any election by a Participant under Section 12(d) above must be made on or prior to the applicable Tax Date.

(f) In the event an election to have Shares withheld is made by a Participant and the Tax Date is deferred under Section 83 of the Code because no election is filed under Section 83(b) of the Code, the Participant shall receive the full number of Shares with respect to which the Option or Stock Purchase Right is exercised but such Participant shall be unconditionally obligated to tender back to the Company the proper number of Shares on the Tax Date.

13. **Non-Transferability of Options and Stock Purchase Rights.**

(a) **General.** Except as set forth in this Section 13, Options and Stock Purchase Rights may not be sold, pledged, assigned, hypothecated, transferred or disposed of in any manner other than by will or by the laws of descent or distribution. The designation of a beneficiary by an Optionee will not constitute a transfer. An Option or Stock Purchase Right may be exercised, during the lifetime of the holder of an Option or Stock Purchase Right, only by such holder or a transferee permitted by this Section 13.

(b) **Limited Transferability Rights.** The Administrator may in its discretion grant transferable Nonstatutory Stock Options pursuant to Option Agreements specifying the manner in which such Nonstatutory Stock Options are transferable.

14. **Adjustments Upon Changes in Capitalization, Merger or Certain Other Transactions.**

(a) **Changes in Capitalization.** Subject to any required action by the stockholders of the Company, the number of Shares of Common Stock covered by each outstanding Option or Stock Purchase Right, the number of Shares set forth in Sections 3 and 8 above and the number of Shares of Common Stock that have been authorized for issuance under the Plan but as to which no Options or Stock Purchase Rights have yet been granted or that have been returned to the Plan upon cancellation or expiration of an Option or Stock Purchase Right, as well as the price per Share of Common Stock covered by each such outstanding Option or Stock Purchase Right, shall be proportionately adjusted for any increase or decrease in the number of issued Shares of Common Stock resulting from a stock split, reverse stock split, stock dividend, combination, recapitalization or reclassification of the Common Stock, or any other increase or decrease in the number of issued Shares of Common Stock effected without receipt of consideration by the Company; provided, however, that conversion of any convertible securities of the Company shall not be deemed to have been “effected without receipt of consideration.” Such adjustment shall be made by the Administrator, whose determination in that respect shall be final, binding and conclusive. Except as expressly provided herein, no issuance by the Company of shares of stock of any class, or securities convertible into shares of stock of any class, shall affect, and no adjustment by reason thereof shall be made with respect to, the number or price of Shares of Common Stock subject to an Option or Stock Purchase Right.

(b) **Dissolution or Liquidation.** In the event of the dissolution or liquidation of the Company, each Option and Stock Purchase Right will terminate immediately prior to the consummation of such action, unless otherwise determined by the Administrator.

(c) **Corporate Transaction.** In the event of a Corporate Transaction, each outstanding Option or Stock Purchase Right shall be assumed or an equivalent option or right shall be substituted by such successor corporation or a parent or subsidiary of such successor corporation (the “Successor Corporation”), unless the Successor Corporation does not agree to assume the award or to substitute an equivalent option or right, in which case such Option or Stock Purchase Right shall terminate upon the consummation of the transaction.

For purposes of this Section 14(c), an Option or a Stock Purchase Right shall be considered assumed, without limitation, if, at the time of issuance of the stock or other consideration upon a Corporate Transaction or a Change of Control, as the case may be, each holder of an Option or Stock Purchase Right would be entitled to receive upon exercise of the award the same number and kind of shares of stock or the same amount of property, cash or securities as such holder would have been entitled to receive upon the occurrence of the transaction if the holder had been, immediately prior to such transaction, the holder of the number of Shares of Common Stock covered by the award at such time (after giving effect to any adjustments in the number of Shares covered by the Option or Stock Purchase Right as provided for in this Section 14); provided that if such consideration received in the transaction is not solely common stock of the Successor Corporation, the Administrator may, with the consent of the Successor Corporation, provide for the consideration to be received upon exercise of the award to be solely common stock of the Successor Corporation equal to the Fair Market Value of the per Share consideration received by holders of Common Stock in the transaction.

(d) **Certain Distributions.** In the event of any distribution to the Company's stockholders of securities of any other entity or other assets (other than dividends payable in cash or stock of the Company) without receipt of consideration by the Company, the Administrator may, in its discretion, appropriately adjust the price per Share of Common Stock covered by each outstanding Option or Stock Purchase Right to reflect the effect of such distribution.

15. **Time of Granting Options and Stock Purchase Rights.** The date of grant of an Option or Stock Purchase Right shall, for all purposes, be the date on which the Administrator makes the determination granting such Option or Stock Purchase Right, or such other date as is determined by the Administrator, provided that in the case of any Incentive Stock Option, the grant date shall be the later of the date on which the Administrator makes the determination granting such Incentive Stock Option or the date of commencement of the Optionee's employment relationship with the Company. Notice of the determination shall be given to each Employee, Director or Consultant to whom an Option or Stock Purchase Right is so granted within a reasonable time after the date of such grant.

16. **Amendment and Termination of the Plan.**

(a) **Authority to Amend or Terminate.** The Board may at any time amend, alter, suspend or discontinue the Plan, but no amendment, alteration, suspension or discontinuation (other than an adjustment pursuant to Section 14 above) shall be made that would materially and adversely affect the rights of any Optionee or holder of Stock Purchase Rights under any outstanding grant, without his or her consent. In addition, to the extent necessary and desirable to comply with the Applicable Laws, the Company shall obtain stockholder approval of any Plan amendment in such a manner and to such a degree as required.

( b ) **Effect of Amendment or Termination.** No amendment or termination of the Plan shall materially and adversely affect Options or Stock Purchase Rights already granted, unless mutually agreed otherwise between the Optionee or holder of the Stock Purchase Rights and the Administrator, which agreement must be in writing and signed by the Optionee or holder and the Company.

17. **Conditions Upon Issuance of Shares.** Notwithstanding any other provision of the Plan or any agreement entered into by the Company pursuant to the Plan, the Company shall not be obligated, and shall have no liability for failure, to issue or deliver any Shares under the Plan unless such issuance or delivery would comply with the Applicable Laws, with such compliance determined by the Company in consultation with its legal counsel. As a condition to the exercise of an Option or Stock Purchase Right, the Company may require the person exercising the award to represent and warrant at the time of any such exercise that the Shares are being purchased only for investment and without any present intention to sell or distribute such Shares if, in the opinion of counsel for the Company, such a representation is required by law.

18. **Reservation of Shares.** The Company, during the term of this Plan, will at all times reserve and keep available such number of Shares as shall be sufficient to satisfy the requirements of the Plan.

19. **Agreements.** Options and Stock Purchase Rights shall be evidenced by Option Agreements and Restricted Stock Purchase Agreements, respectively, in such form(s) as the Administrator shall from time to time approve.

20. **Stockholder Approval.** If required by the Applicable Laws, continuance of the Plan shall be subject to approval by the stockholders of the Company within twelve (12) months before or after the date the Plan is adopted. Such stockholder approval shall be obtained in the manner and to the degree required under the Applicable Laws.

21. **Information and Documents to Optionees and Purchasers.** If required by the Applicable Laws, the Company shall provide financial statements at least annually to each Optionee and to each individual who acquired Shares pursuant to the Plan, during the period such Optionee or purchaser has one or more Options or Stock Purchase Rights outstanding, and in the case of an individual who acquired Shares pursuant to the Plan, during the period such individual owns such Shares. The Company shall not be required to provide such information if the issuance of Options or Stock Purchase Rights under the Plan is limited to key employees whose duties in connection with the Company assure their access to equivalent information.

22. **Section 409A.** The Plan is intended to comply with Section 409A of the Code to the extent subject thereto, and, accordingly, to the maximum extent permitted, the Plan shall be interpreted and administered to be in compliance therewith. Any payments described in the Plan that are due within the "short-term deferral period" as defined in Section 409A of the Code shall not be treated as deferred compensation unless Applicable Laws require otherwise. Notwithstanding anything to the contrary in the Plan, to the extent required to avoid accelerated taxation and tax penalties under Section 409A of the Code, amounts that would otherwise be payable and benefits that would otherwise be provided pursuant to the Plan during the six (6) month period immediately following the Participant's termination of Continuous Service Status shall instead be paid on the first payroll date after the six-month anniversary of the Participant's separation from service (or the Participant's death, if earlier). Notwithstanding the foregoing, neither the Company nor the Administrator shall have any obligation to take any action to prevent the assessment of any excise tax or penalty on any Participant under Section 409A of the Code and neither the Company nor the Administrator will have any liability to any Participant for such tax or penalty.

**Attachment A**

ACTINIUM PHARMACEUTICALS, INC.

**AMENDED AND RESTATED STOCK PLAN**

**STOCK OPTION AGREEMENT**

1. **Grant of Option.** Actinium Pharmaceuticals, Inc., a Delaware corporation (the “Company”), hereby grants to «Optionee» (“Optionee”), an option (the “Option”) to purchase the total number of shares of Common Stock (the “Shares”) set forth in the Notice of Stock Option Grant, in the form attached hereto as Exhibit A (the “Notice”), at the exercise price per Share set forth in the Notice (the “Exercise Price”) subject to the terms, definitions and provisions of the Actinium Pharmaceuticals, Inc. Amended and Restated Stock Plan (the “Plan”) adopted by the Company, which is incorporated in this Agreement by reference. Unless otherwise defined in this Agreement, the terms used in this Agreement shall have the meanings defined in the Plan.

2. **Designation of Option.** This Option is intended to be an Incentive Stock Option as defined in Section 422 of the Code only to the extent so designated in the Notice, and to the extent it is not so designated or to the extent the Option does not qualify as an Incentive Stock Option, it is intended to be a Nonstatutory Stock Option.

Notwithstanding the above, if designated as an Incentive Stock Option, in the event that the Shares subject to this Option (and all other Incentive Stock Options granted to Optionee by the Company or any Parent or Subsidiary, including under other plans of the Company) that first become exercisable in any calendar year have an aggregate fair market value (determined for each Share as of the date of grant of the option covering such Share) in excess of \$100,000, the Shares in excess of \$100,000 shall be treated as subject to a Nonstatutory Stock Option, in accordance with Section 5(c) of the Plan.

3. **Exercise of Option.** This Option shall be exercisable during its term in accordance with the Vesting/Exercise Schedule set out in the Notice and with the provisions of Section 10 of the Plan as follows:

(a) **Right to Exercise.**

(i) This Option may not be exercised for a fraction of a share.

(ii) In the event of Optionee’s death, disability or other termination of employment, the exercisability of the Option is governed by Section 5 below, subject to the limitations contained in this Section 3.

(iii) In no event may this Option be exercised after the Expiration Date of the Option as set forth in the Notice, which shall not be more than ten (10) years after the date the Option was granted. However, in the case of an Incentive Stock Option granted to a Ten Percent Holder, the Expiration Date of such Incentive Stock Option shall not be more than five (5) years after the date of the grant thereof.

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(b) **Method of Exercise.**

(i) This Option shall be exercisable by execution and delivery of the Exercise Notice and Restricted Stock Purchase Agreement attached hereto as **Exhibit B** (the "**Exercise Agreement**") or of any other form of written notice approved for such purpose by the Company which shall state Optionee's election to exercise the Option, the number of Shares in respect of which the Option is being exercised, and such other representations and agreements as to the holder's investment intent with respect to such Shares as may be required by the Company pursuant to the provisions of the Plan. Such written notice shall be signed by Optionee and shall be delivered to the Company by such means as are determined by the Plan Administrator in its discretion to constitute adequate delivery. The written notice shall be accompanied by payment of the Exercise Price. This Option shall be deemed to be exercised upon receipt by the Company of such written notice accompanied by the Exercise Price.

(ii) As a condition to the exercise of this Option and as further set forth in Section 12 of the Plan, Optionee agrees to make adequate provision for federal, state or other tax withholding obligations, if any, which arise upon the vesting or exercise of the Option, or disposition of Shares, whether by withholding, direct payment to the Company, or otherwise.

(iii) The Company is not obligated, and will have no liability for failure, to issue or deliver any Shares upon exercise of the Option unless such issuance or delivery would comply with the Applicable Laws, with such compliance determined by the Company in consultation with its legal counsel. This Option may not be exercised until such time as the Plan has been approved by the stockholders of the Company, or if the issuance of such Shares upon such exercise or the method of payment of consideration for such shares would constitute a violation of any applicable federal or state securities or other law or regulation, including any rule under Part 221 of Title 12 of the Code of Federal Regulations as promulgated by the Federal Reserve Board. As a condition to the exercise of this Option, the Company may require Optionee to make any representation and warranty to the Company as may be required by the Applicable Laws. Assuming such compliance, for income tax purposes the Shares shall be considered transferred to Optionee on the date on which the Option is exercised with respect to such Shares.

(c) **Voting Agreement.** Upon exercise of the Option, Optionee shall enter into a voting agreement providing that Optionee will grant a revocable proxy to management of the Company to vote the Optionee's Option Shares for all purposes, in form and substance satisfactory to the Company.

4. **Method of Payment.** Payment of the Exercise Price shall be by any of the following, or a combination of the following, at the election of Optionee:

(a) cash or check; or

(b) delivery of a properly executed exercise notice together with irrevocable instructions to a broker approved by the Company to deliver promptly to the Company the amount of sale or loan proceeds required to pay the exercise price.

5. **Termination of Relationship.** Following the date of termination of Optionee's Continuous Service Status for any reason (the "**Termination Date**"), Optionee may exercise the Option only as set forth in the Notice and this Section 5. To the extent that Optionee is not vested in the Optioned Stock as of the Termination Date, or if Optionee (or other person entitled to exercise the Option) does not exercise this Option within the Termination Period set forth in the Notice or the termination periods set forth below, the Option shall terminate in its entirety. In no event, may any Option be exercised after the Expiration Date of the Option as set forth in the Notice and subject to the restrictions set forth in Section 3(a)(iii).

( a ) **Termination.** In the event of termination of Optionee's Continuous Service Status other than as a result of Optionee's permanent and total disability or death and subject to the restrictions set forth in Section 3(a)(iii), Optionee may, to the extent Optionee is vested in the Optioned Stock as of the Termination Date, exercise this Option during the Termination Period set forth in the Notice.

( b ) **Other Terminations.** In connection with any termination other than a termination covered by Section 5(a), Optionee may exercise the Option only as described below:

( i ) **Termination upon Disability of Optionee.** In the event of termination of Optionee's Continuous Service Status as a result of Optionee's permanent and total disability within the meaning of Section 22(e)(3) of the Code, Optionee may, to the extent Optionee was vested in the Optioned Stock as of such Termination Date, exercise this Option at any time within one (1) year from the Termination Date.

(ii) **Death of Optionee.** In the event of the death of Optionee (A) during the term of this Option and while an Employee or Consultant of the Company and having been in Continuous Service Status since the date of grant of the Option, or (B) within three (3) months after Optionee's Termination Date, to the extent Optionee was vested in the Optioned Stock as of the Termination Date, the Option may be exercised within one (1) year of the date of Optionee's death by Optionee's estate or by a person who acquired the right to exercise the Option by bequest or inheritance.

6. **Non-Transferability of Option.** This Option may not be transferred in any manner otherwise than by will or by the laws of descent or distribution and may be exercised during the lifetime of Optionee only by him or her. The terms of this Option shall be binding upon the executors, administrators, heirs, successors and assigns of Optionee.

7. **Tax Consequences.** Below is a brief summary as of the date of this Option of certain of the federal tax consequences of exercise of this Option and disposition of the Shares under the laws in effect as of the Date of Grant. THIS SUMMARY IS INCOMPLETE, AND THE TAX LAWS AND REGULATIONS ARE SUBJECT TO CHANGE. OPTIONEE SHOULD CONSULT A TAX ADVISER BEFORE EXERCISING THIS OPTION OR DISPOSING OF THE SHARES.

(a) **Incentive Stock Option.**

( i ) **Tax Treatment upon Exercise and Sale of Shares.** If this Option qualifies as an Incentive Stock Option, there will be no regular federal income tax liability upon the exercise of the Option, although the excess, if any, of the fair market value of the Shares on the date of exercise over the Exercise Price will be treated as an adjustment to the alternative minimum tax for federal tax purposes and may subject Optionee to the alternative minimum tax in the year of exercise. If Shares issued upon exercise of an Incentive Stock Option are held for at least one (1) year after exercise and are disposed of at least two (2) years after the Option grant date, any gain realized on disposition of the Shares will also be treated as long-term capital gain for federal income tax purposes. If Shares issued upon exercise of an Incentive Stock Option are disposed of within such one-year period or within two (2) years after the Option grant date, any gain realized on such disposition will be treated as compensation income (taxable at ordinary income rates) to the extent of the difference between the Exercise Price and the lesser of (i) the fair market value of the Shares on the date of exercise, or (ii) the sale price of the Shares.

(ii) **Notice of Disqualifying Dispositions.** With respect to any Shares issued upon exercise of an Incentive Stock Option, if Optionee sells or otherwise disposes of such Shares on or before the later of (i) the date two (2) years after the Option grant date, or (ii) the date one (1) year after the date of exercise, Optionee shall immediately notify the Company in writing of such disposition. Optionee acknowledges and agrees that he or she may be subject to income tax withholding by the Company on the compensation income recognized by Optionee from the early disposition by payment in cash or out of the current earnings paid to Optionee.

( b ) **Nonstatutory Stock Option.** If this Option does not qualify as an Incentive Stock Option, there may be a regular federal (and state) income tax liability upon the exercise of the Option. Optionee will be treated as having received compensation income (taxable at ordinary income tax rates) equal to the excess, if any, of the fair market value of the Shares on the date of exercise over the Exercise Price. If Optionee is an Employee, the Company will be required to withhold from Optionee's compensation or collect from Optionee and pay to the applicable taxing authorities an amount equal to a percentage of this compensation income at the time of exercise. If Shares issued upon exercise of a Nonstatutory Stock Option are held for at least one (1) year, any gain realized on disposition of the Shares will be treated as long-term capital gain for federal income tax purposes.

8. **Lock-Up Agreement.** In connection with the initial public offering of the Company's securities and upon request of the Company or the underwriters managing any underwritten offering of the Company's securities, Optionee hereby agrees not to sell, make any short sale of, loan, grant any option for the purchase of, or otherwise dispose of any securities of the Company however and whenever acquired (other than those included in the registration) without the prior written consent of the Company or such underwriters, as the case may be, for such period of time (not to exceed 180 days) from the effective date of such registration as may be requested by the Company or such managing underwriters and to execute an agreement reflecting the foregoing as may be requested by the underwriters at the time of the public offering.

9. **Effect of Agreement.** Optionee acknowledges receipt of a copy of the Plan and represents that he or she is familiar with the terms and provisions thereof (and has had an opportunity to consult counsel regarding the Option terms), and hereby accepts this Option and agrees to be bound by its contractual terms as set forth herein and in the Plan. Optionee hereby agrees to accept as binding, conclusive and final all decisions and interpretations of the Plan Administrator regarding any questions relating to the Option. In the event of a conflict between the terms and provisions of the Plan and the terms and provisions of the Notice and this Agreement, the Plan terms and provisions shall prevail. The Option, including the Plan, constitutes the entire agreement between Optionee and the Company on the subject matter hereof and supersedes all proposals, written or oral, and all other communications between the parties relating to such subject matter.

[Signature Page Follows]

This Agreement may be executed in two or more counterparts, each of which shall be deemed an original and all of which together shall constitute one document.

«Optionee»

**ACTINIUM PHARMACEUTICALS, INC.**

\_\_\_\_\_

By:

\_\_\_\_\_

Name:

\_\_\_\_\_

Title:

\_\_\_\_\_

Dated: \_\_\_\_\_

EXHIBIT A

ACTINIUM PHARMACEUTICALS, INC.

**AMENDED AND RESTATED STOCK PLAN**

**NOTICE OF STOCK OPTION GRANT**

«Optionee»

You have been granted an option to purchase Common Stock of Actinium Pharmaceuticals, Inc. (the “Company”) as follows:

Board Approval Date: «BoardApprovalDate»

Date of Grant (Later of Board Approval Date or Commencement of Employment/Consulting): «GrantDate»

Exercise Price per Share: \$«ExercisePrice»

Total Number of Shares Granted: «NoofShares»

Total Exercise Price: \$«TotalExercisePrice»

Type of Option: «NoSharesISO» Shares Incentive Stock Option  
«NoSharesNSO» Shares Nonstatutory Stock Option

Expiration Date: «Term»/«ExpirationDate»

Vesting Commencement Date: «VestingCommencementDate»

Vesting/Exercise Schedule: So long as your full time employment or consulting relationship with the Company continues, the Shares underlying this Option shall vest and become exercisable in accordance with the following schedule: \_\_\_\_\_ of the Shares subject to the Option shall vest and become exercisable on the \_\_\_\_\_ month anniversary of the Vesting Commencement Date and \_\_\_\_\_ of the total number of Shares subject to the Option shall vest and become exercisable each month thereafter.

Termination Period: This Option must be exercised within 3 months after termination of employment or consulting relationship except as set out in Section 5 of the Stock Option Agreement (but in no event later than the Expiration Date). Optionee is responsible for keeping track of these exercise periods following termination for any reason of his or her service relationship with the Company. The Company will not provide further notice of such periods.

Transferability: This Option may not be transferred.

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By your signature and the signature of the Company's representative below, you and the Company agree that this option is granted under and governed by the terms and conditions of the Actinium Pharmaceuticals, Inc. Amended and Restated Stock Plan and the Stock Option Agreement, both of which are attached and made a part of this document.

In addition, you agree and acknowledge that your rights to any Shares underlying the Option will be earned only as you provide services to the Company over time, that the grant of the Option is not as consideration for services you rendered to the Company prior to your Vesting Commencement Date, and that nothing in this Notice or the attached documents confers upon you any right to continue your employment or consulting relationship with the Company for any period of time, nor does it interfere in any way with your right or the Company's right to terminate that relationship at any time, for any reason, with or without cause.

**ACTINIUM PHARMACEUTICALS, INC.**

\_\_\_\_\_  
«Optionee»

By: \_\_\_\_\_

Name: \_\_\_\_\_

Title: \_\_\_\_\_

EXHIBIT B

ACTINIUM PHARMACEUTICALS, INC.

AMENDED AND RESTATED STOCK PLAN

EXERCISE NOTICE AND RESTRICTED STOCK PURCHASE AGREEMENT

This Agreement (“Agreement”) is made as of \_\_\_\_\_, by and between Actinium Pharmaceuticals, Inc., a Delaware corporation (the “Company”), and «Optionee» (“Purchaser”). To the extent any capitalized terms used in this Agreement are not defined, they shall have the meaning ascribed to them in the Company’s Amended and Restated Stock Plan.

1 . **Exercise of Option.** Subject to the terms and conditions hereof, Purchaser hereby elects to exercise his or her option to purchase «NoofShares» shares of the Common Stock (the “Shares”) of the Company under and pursuant to the Company’s Amended and Restated Stock Plan (the “Plan”) and the Stock Option Agreement granted «GrantDate» (the “Option Agreement”). The purchase price for the Shares shall be \$«ExercisePrice» per Share for a total purchase price of \$\_\_\_\_\_. The term “Shares” refers to the purchased Shares and all securities received in replacement of the Shares or as stock dividends or splits, all securities received in replacement of the Shares in a recapitalization, merger, reorganization, exchange or the like, and all new, substituted or additional securities or other properties to which Purchaser is entitled by reason of Purchaser’s ownership of the Shares.

2. **Time and Place of Exercise.** The purchase and sale of the Shares under this Agreement shall occur at the principal office of the Company simultaneously with the execution and delivery of this Agreement in accordance with the provisions of Section 3(b) of the Option Agreement. On such date, the Company will deliver to Purchaser a certificate representing the Shares to be purchased by Purchaser (which shall be issued in Purchaser’s name) against payment of the exercise price therefor by Purchaser by (a) check made payable to the Company, (b) cancellation of indebtedness of the Company to Purchaser, (c) delivery of shares of the Common Stock of the Company in accordance with Section 4 of the Option Agreement, or (d) by a combination of the foregoing.

3 . **Limitations on Transfer.** In addition to any other limitation on transfer created by applicable securities laws, Purchaser shall not assign, encumber or dispose of any interest in the Shares except in compliance with the provisions below and applicable securities laws.

( a ) **Right of First Refusal.** Before any Shares held by Purchaser or any transferee of Purchaser (either being sometimes referred to herein as the “Holder”) may be sold or otherwise transferred (including transfer by gift or operation of law), the Company or its assignee(s) shall have a right of first refusal to purchase the Shares on the terms and conditions set forth in this Section 3(a) (the “Right of First Refusal”).

(i) **Notice of Proposed Transfer.** The Holder of the Shares shall deliver to the Company a written notice (the “Notice”) stating: (i) the Holder’s bona fide intention to sell or otherwise transfer such Shares; (ii) the name of each proposed purchaser or other transferee (“Proposed Transferee”); (iii) the number of Shares to be transferred to each Proposed Transferee; and (iv) the terms and conditions of each proposed sale or transfer. The Holder shall offer the Shares at the same price (the “Offered Price”) and upon the same terms (or terms as similar as reasonably possible) to the Company or its assignee(s).

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(ii) **Exercise of Right of First Refusal.** At any time within thirty (30) days after receipt of the Notice, the Company and/or its assignee(s) may, by giving written notice to the Holder, elect to purchase all, but not less than all, of the Shares proposed to be transferred to any one or more of the Proposed Transferees, at the purchase price determined in accordance with subsection (iii) below.

(iii) **Purchase Price.** The purchase price (“Purchase Price”) for the Shares purchased by the Company or its assignee(s) under this Section 3(a) shall be the Offered Price. If the Offered Price includes consideration other than cash, the cash equivalent value of the non-cash consideration shall be determined by the Board of Directors of the Company in good faith.

(iv) **Payment.** Payment of the Purchase Price shall be made, at the option of the Company or its assignee(s), in cash (by check), by cancellation of all or a portion of any outstanding indebtedness, or by any combination thereof within thirty (30) days after receipt of the Notice or in the manner and at the times set forth in the Notice.

(v) **Holder’s Right to Transfer.** If all of the Shares proposed in the Notice to be transferred to a given Proposed Transferee are not purchased by the Company and/or its assignee(s) as provided in this Section 3(a), then the Holder may sell or otherwise transfer such Shares to that Proposed Transferee at the Offered Price or at a higher price, provided that such sale or other transfer is consummated within sixty (60) days after the date of the Notice and provided further that any such sale or other transfer is effected in accordance with any applicable securities laws and the Proposed Transferee agrees in writing that the provisions of this Section 3 shall continue to apply to the Shares in the hands of such Proposed Transferee. If the Shares described in the Notice are not transferred to the Proposed Transferee within such period, or if the Holder proposes to change the price or other terms to make them more favorable to the Proposed Transferee, a new Notice shall be given to the Company, and the Company and/or its assignees shall again be offered the Right of First Refusal before any Shares held by the Holder may be sold or otherwise transferred.

(vi) **Exception for Certain Family Transfers.** Anything to the contrary contained in this Section 3(a) notwithstanding, the transfer of any or all of the Shares during Purchaser’s lifetime or on Purchaser’s death by will or intestacy to Purchaser’s Immediate Family or a trust for the benefit of Purchaser’s Immediate Family shall be exempt from the provisions of this Section 3(a). “Immediate Family” as used herein shall mean spouse, lineal descendant or antecedent, father, mother, brother or sister. In such case, the transferee or other recipient shall receive and hold the Shares so transferred subject to the provisions of this Section, and there shall be no further transfer of such Shares except in accordance with the terms of this Section 3.

(b) **Involuntary Transfer.**

(i) **Company's Right to Purchase upon Involuntary Transfer.** In the event, at any time after the date of this Agreement, of any transfer by operation of law or other involuntary transfer (including death or divorce, but excluding a transfer to Immediate Family as set forth in Section 3(a)(vi) above) of all or a portion of the Shares by the record holder thereof, the Company shall have an option to purchase all of the Shares transferred at the greater of the purchase price paid by Purchaser pursuant to this Agreement or the Fair Market Value of the Shares on the date of transfer. Upon such a transfer, the person acquiring the Shares shall promptly notify the Secretary of the Company of such transfer. The right to purchase such Shares shall be provided to the Company for a period of thirty (30) days following receipt by the Company of written notice by the person acquiring the Shares.

(ii) **Price for Involuntary Transfer.** With respect to any stock to be transferred pursuant to Section 3(b)(i), the price per Share shall be a price set by the Board of Directors of the Company that will reflect the current value of the stock in terms of present earnings and future prospects of the Company. The Company shall notify Purchaser or his or her executor of the price so determined within thirty (30) days after receipt by it of written notice of the transfer or proposed transfer of Shares. However, if the Purchaser does not agree with the valuation as determined by the Board of Directors of the Company, the Purchaser shall be entitled to have the valuation determined by an independent appraiser to be mutually agreed upon by the Company and the Purchaser and whose fees shall be borne equally by the Company and the Purchaser.

(c) **Assignment.** The right of the Company to purchase any part of the Shares may be assigned in whole or in part to any shareholder or shareholders of the Company or other persons or organizations.

( e ) **Restrictions Binding on Transferees.** All transferees of Shares or any interest therein will receive and hold such Shares or interest subject to the provisions of this Agreement. Any sale or transfer of the Company's Shares shall be void unless the provisions of this Agreement are satisfied.

(f) **Termination of Rights.** The right of first refusal granted the Company by Section 3(a) above and the option to repurchase the Shares in the event of an involuntary transfer granted the Company by Section 3(b) above shall terminate upon the first sale of Common Stock of the Company to the general public pursuant to a registration statement filed with and declared effective by the Securities and Exchange Commission under the Securities Act of 1933, as amended (the "Securities Act"). Upon termination of the right of first refusal described in Section 3(a) above, a new certificate or certificates representing the Shares not repurchased shall be issued, on request, without the legend referred to in Section 5(a)(ii) herein and delivered to Purchaser.

4 . **Investment and Taxation Representations.** In connection with the purchase of the Shares, Purchaser represents to the Company the following:

(a) Purchaser is aware of the Company's business affairs and financial condition and has acquired sufficient information about the Company to reach an informed and knowledgeable decision to acquire the Shares. Purchaser is purchasing these securities for investment for his or her own account only and not with a view to, or for resale in connection with, any "distribution" thereof within the meaning of the Securities Act or under any applicable provision of state law. Purchaser does not have any present intention to transfer the Shares to any person or entity.

(b) Purchaser understands that the Shares have not been registered under the Securities Act by reason of a specific exemption therefrom, which exemption depends upon, among other things, the bona fide nature of Purchaser's investment intent as expressed herein.

(c) Purchaser further acknowledges and understands that the securities must be held indefinitely unless they are subsequently registered under the Securities Act or an exemption from such registration is available. Purchaser further acknowledges and understands that the Company is under no obligation to register the securities. Purchaser understands that the certificate(s) evidencing the securities will be imprinted with a legend which prohibits the transfer of the securities unless they are registered or such registration is not required in the opinion of counsel for the Company.

(d) Purchaser is familiar with the provisions of Rules 144 and 701, each promulgated under the Securities Act, which, in substance, permit limited public resale of "restricted securities" acquired, directly or indirectly, from the issuer of the securities (or from an affiliate of such issuer), in a non-public offering subject to the satisfaction of certain conditions. Purchaser understands that the Company provides no assurances as to whether he or she will be able to resell any or all of the Shares pursuant to Rule 144 or Rule 701, which rules require, among other things, that the Company be subject to the reporting requirements of the Securities Exchange Act of 1934, as amended, that resales of securities take place only after the holder of the Shares has held the Shares for certain specified time periods, and under certain circumstances, that resales of securities be limited in volume and take place only pursuant to brokered transactions. Notwithstanding this paragraph (d), Purchaser acknowledges and agrees to the restrictions set forth in paragraph (e) below.

(e) Purchaser further understands that in the event all of the applicable requirements of Rule 144 or 701 are not satisfied, registration under the Securities Act, compliance with Regulation A, or some other registration exemption will be required; and that, notwithstanding the fact that Rules 144 and 701 are not exclusive, the Staff of the Securities and Exchange Commission has expressed its opinion that persons proposing to sell private placement securities other than in a registered offering and otherwise than pursuant to Rule 144 or 701 will have a substantial burden of proof in establishing that an exemption from registration is available for such offers or sales, and that such persons and their respective brokers who participate in such transactions do so at their own risk.

(f) Purchaser understands that Purchaser may suffer adverse tax consequences as a result of Purchaser's purchase or disposition of the Shares. Purchaser represents that Purchaser has consulted any tax consultants Purchaser deems advisable in connection with the purchase or disposition of the Shares and that Purchaser is not relying on the Company for any tax advice.

5. **Restrictive Legends and Stop-Transfer Orders.**

(a) **Legends.** The certificate or certificates representing the Shares shall bear the following legends (as well as any legends required by applicable state and federal corporate and securities laws):

- (i) THE SHARES REPRESENTED BY THIS CERTIFICATE HAVE NOT BEEN REGISTERED UNDER THE SECURITIES ACT OF 1933 OR APPLICABLE STATE SECURITIES LAWS, AND HAVE BEEN ACQUIRED FOR INVESTMENT AND NOT WITH A VIEW TO, OR IN CONNECTION WITH, THE SALE OR DISTRIBUTION THEREOF. NO SUCH SALE OR DISTRIBUTION MAY BE EFFECTED WITHOUT AN EFFECTIVE REGISTRATION STATEMENT RELATED THERETO OR AN OPINION OF COUNSEL FOR THE COMPANY THAT SUCH REGISTRATION IS NOT REQUIRED UNDER THE SECURITIES ACT OF 1933 OR APPLICABLE STATE SECURITIES LAWS.
- (ii) THE SHARES REPRESENTED BY THIS CERTIFICATE MAY BE TRANSFERRED ONLY IN ACCORDANCE WITH THE TERMS OF AN AGREEMENT BETWEEN THE COMPANY AND THE STOCKHOLDER, A COPY OF WHICH IS ON FILE WITH THE SECRETARY OF THE COMPANY.

(b) **Stop-Transfer Notices.** Purchaser agrees that, in order to ensure compliance with the restrictions referred to herein, the Company may issue appropriate “stop transfer” instructions to its transfer agent, if any, and that, if the Company transfers its own securities, it may make appropriate notations to the same effect in its own records.

(c) **Refusal to Transfer.** The Company shall not be required (i) to transfer on its books any Shares that have been sold or otherwise transferred in violation of any of the provisions of this Agreement or (ii) to treat as owner of such Shares or to accord the right to vote or pay dividends to any purchaser or other transferee to whom such Shares shall have been so transferred.

6 . **No Employment Rights.** Nothing in this Agreement shall affect in any manner whatsoever the right or power of the Company, or a parent or subsidiary of the Company, to terminate Purchaser’s employment or consulting relationship, for any reason, with or without cause.

7. **Lock-Up Agreement.** In connection with the initial public offering of the Company's securities and upon request of the Company or the underwriters managing any underwritten offering of the Company's securities, Purchaser agrees not to sell, make any short sale of, loan, grant any option for the purchase of, or otherwise dispose of any securities of the Company however or whenever acquired (other than those included in the registration) without the prior written consent of the Company or such underwriters, as the case may be, for such period of time (not to exceed 180 days) from the effective date of such registration as may be requested by the Company or such managing underwriters and to execute an agreement reflecting the foregoing as may be requested by the underwriters at the time of the public offering.

8. **Miscellaneous.**

(a) **Governing Law.** This Agreement and all acts and transactions pursuant hereto and the rights and obligations of the parties hereto shall be governed, construed and interpreted in accordance with the laws of the State of Delaware, without giving effect to principles of conflicts of law.

(b) **Entire Agreement; Enforcement of Rights.** This Agreement sets forth the entire agreement and understanding of the parties relating to the subject matter herein and merges all prior discussions between them. No modification of or amendment to this Agreement, nor any waiver of any rights under this Agreement, shall be effective unless in writing signed by the parties to this Agreement. The failure by either party to enforce any rights under this Agreement shall not be construed as a waiver of any rights of such party.

(c) **Severability.** If one or more provisions of this Agreement are held to be unenforceable under applicable law, the parties agree to renegotiate such provision in good faith. In the event that the parties cannot reach a mutually agreeable and enforceable replacement for such provision, then (i) such provision shall be excluded from this Agreement, (ii) the balance of the Agreement shall be interpreted as if such provision were so excluded and (iii) the balance of the Agreement shall be enforceable in accordance with its terms.

( d ) **Construction.** This Agreement is the result of negotiations between and has been reviewed by each of the parties hereto and their respective counsel, if any; accordingly, this Agreement shall be deemed to be the product of all of the parties hereto, and no ambiguity shall be construed in favor of or against any one of the parties hereto.

(e) **Notices.** Any notice required or permitted by this Agreement shall be in writing and shall be deemed sufficient when delivered personally or sent by telegram or fax or forty-eight (48) hours after being deposited in the U.S. mail, as certified or registered mail, with postage prepaid, and addressed to the party to be notified at such party's address as set forth below or as subsequently modified by written notice.

(f) **Counterparts.** This Agreement may be executed in two or more counterparts, each of which shall be deemed an original and all of which together shall constitute one instrument.

( g ) **Successors and Assigns.** The rights and benefits of this Agreement shall inure to the benefit of, and be enforceable by the Company's successors and assigns. The rights and obligations of Purchaser under this Agreement may only be assigned with the prior written consent of the Company.

(h) **California Corporate Securities Law.** THE SALE OF THE SECURITIES WHICH ARE THE SUBJECT OF THIS AGREEMENT HAS NOT BEEN QUALIFIED WITH THE COMMISSIONER OF CORPORATIONS OF THE STATE OF CALIFORNIA AND THE ISSUANCE OF THE SECURITIES OR THE PAYMENT OR RECEIPT OF ANY PART OF THE CONSIDERATION THEREFOR PRIOR TO THE QUALIFICATION IS UNLAWFUL, UNLESS THE SALE OF SECURITIES IS EXEMPT FROM QUALIFICATION BY SECTION 25100, 25102 OR 25105 OF THE CALIFORNIA CORPORATIONS CODE. THE RIGHTS OF ALL PARTIES TO THIS AGREEMENT ARE EXPRESSLY CONDITIONED UPON THE QUALIFICATION BEING OBTAINED, UNLESS THE SALE IS SO EXEMPT.

[Signature Page Follows]

The parties have executed this Exercise Notice and Restricted Stock Purchase Agreement as of the date first set forth above.

**COMPANY:**  
**ACTINIUM PHARMACEUTICALS, INC.**

By: \_\_\_\_\_  
Name: \_\_\_\_\_  
Title: \_\_\_\_\_

**PURCHASER:**  
«Optionee»  
\_\_\_\_\_  
(Signature)

Address: \_\_\_\_\_  
\_\_\_\_\_

I, \_\_\_\_\_, spouse of «Optionee», have read and hereby approve the foregoing Agreement. In consideration of the Company's granting my spouse the right to purchase the Shares as set forth in the Agreement, I hereby agree to be irrevocably bound by the Agreement and further agree that any community property or other such interest shall hereby be similarly bound by the Agreement. I hereby appoint my spouse as my attorney-in-fact with respect to any amendment or exercise of any rights under the Agreement.

\_\_\_\_\_  
Spouse of «Optionee»

**RECEIPT**

The undersigned hereby acknowledges receipt of Certificate No. \_\_\_\_\_ for \_\_\_\_\_ shares of Common Stock of Actinium Pharmaceuticals, Inc.

Dated: \_\_\_\_\_

\_\_\_\_\_  
«Optionee»

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**RECEIPT**

Actinium Pharmaceuticals, Inc. (the "Company") hereby acknowledges receipt of (check as applicable):

\_\_\_\_\_ A check in the amount of \$ \_\_\_\_\_

\_\_\_\_\_ The cancellation of indebtedness in the amount of \$ \_\_\_\_\_

\_\_\_\_\_ Certificate No. \_\_\_\_\_ representing \_\_\_\_\_ shares of the Company's Common Stock with a fair market value of \$ \_\_\_\_\_

given by «Optionee» as consideration for Certificate No. \_\_\_\_\_ for \_\_\_\_\_ shares of Common Stock of the Company.

Dated: \_\_\_\_\_

**ACTINIUM PHARMACEUTICALS, INC.**

By: \_\_\_\_\_

Name: \_\_\_\_\_  
(print)

Title: \_\_\_\_\_



Effective Date: August 11, 2014

Sandesh Seth  
40 East 89<sup>th</sup> Street, Apt. 7A  
New York, NY 10128

Dear Mr. Seth:

On behalf of Actinium Pharmaceuticals, Inc. (the “Company”), I am pleased to offer you the position of Executive Chairman (the “Chairman”) of the Company. Speaking for myself, as well as the other members of the Company’s Board of Directors (the “Board”), we look forward to your future success in this position.

1. Position. The terms of your new consulting position with the Company are as set forth below:

(a) You shall serve as Executive Chairman of the Company with such responsibilities, duties and authority as are assigned to you by the Board, or its designee.

As Executive Chairman of our Company, you act as an officer and consultant and, as such, perform your duties subject in all instances to the oversight of our board of directors and the power of our board of directors to approve all applicable corporation actions (which powers shall not be vested in the office of Executive Chairman). The Executive Chairman is not an “executive officer” (as defined in SEC Rule 3b-7) of our company as the role of the Executive Chairman by design is not an officer who performs a policy making function for our company. Rather, the Executive Chairman serves as a conduit between our board and our executive management team and is available to act as an advisor and consultant to our executive management team, who are responsible for development and implementation of our corporate policies under the supervision of our board of directors.

Subject to such other roles, duties and projects as may (consistent with the terms and provisions of our Amended and Restated Bylaws and the resolutions of our board that formed the office of Executive Chairman) be assigned by our board to the Executive Chairman, the primary responsibilities of the Executive Chairman are as follows:

- i) Chair annual and special board meetings and annual stockholder meetings and, subject to availability, attend meetings of the committees of the board;
  - ii) Provide overall board leadership and establish guiding principles for the board;
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iii) Manage the affairs of the board and facilitate board action in such a way that strategic and policy decisions are fully discussed, debated and decided by the board;

iv) In cooperation with the President and Chief Executive Officer, and other Company Officers as appropriate or selected by the Executive Chairman/Board, ensure that our strategic orientation is defined and communicated to the board for its approval and that all material issues are dealt with by the board in a timely manner;

v) Ensure that the board has efficient communication channels regarding all material issues concerning the business and see to it that directors are informed about these issues;

vi) Act as a representative of the board and consult with board members outside the regularly scheduled meetings of the board and of board committees;

vii) Meet and confer as often as required with our President and Chief Executive Officer and executive management to ensure that there is efficient communication between the Executive Chairman, the President and Chief Executive Officer, other executive management and board members;

viii) Offer advice and consultation to the President and Chief Executive Officer and executive management on the overall management of the business and affairs of our company as well as specific matters upon the request of the President and Chief Executive Officer and or the board;

ix) In consultation and partnership with the President and Chief Executive Officer, the Executive Chairman may act as our representative with business partners of our company; and

x) At the request of the board or the President and Chief Executive Officer the Executive Chairman may be placed in charge of special corporate strategic initiatives or projects.

(b) You agree to devote your best efforts to advance the interests of the Company and to discharge adequately your duties hereunder. Nothing herein shall prohibit you as the Executive Chairman from accepting or continuing in any employment, consultancy, management or board position with any other for-profit or non-profit entity, being an investor in another company such as a member of a limited liability company, a general or limited partner of a limited partnership or a stockholder of a corporation. You shall report directly to the Board.

2. Start Date. The parties agree that you have commenced this new position with the Company on August 11, 2014 (“Start Date”).

3. Proof of Right to Work. For purposes of federal immigration law, you, if applicable, will be required to provide to the Company documentary evidence of your identity and eligibility for employment in the United States.

#### 4. Compensation.

(a) Consulting Fee. You will be paid an annual consulting fee of three hundred fifty thousand dollars (\$350,000), which will be paid in accordance with the Company's regular payroll practices for consultants. Upon the six month anniversary of your Start Date, the Board will review your consulting fee with the help of an independent compensation consultant to adjust your consulting fee is to be competitively aligned to a range between the 25<sup>th</sup> (twenty-fifth) and 75<sup>th</sup> (seventy-fifth) percentile of the relevant market data of Chairman positions of similarly situated publicly traded Biotech companies. The Board shall review the amount of your consulting fee and performance bonus, and shall determine the appropriate adjustments to each component of your compensation within 60 days of the start of each calendar year. During the Term of this Agreement, your annual consulting fee shall be maintained at least at the same amount as the annual salary of the Chief Executive Officer (Principal Executive Officer) (the "CEO") of the Company. For example, if the CEO's annual salary is increased by \$30,000 per year, the Consultant's annual consulting fee shall also be increased by \$30,000 per year. For the avoidance of doubt, the Board at its discretion may also pay the consultant an annual consulting fee in excess of the CEO's annual salary.

(b) Performance Cash Bonus. You shall be entitled to participate in a Company bonus program, which shall be established by the Board pursuant to which the Board shall award bonuses to you, based upon the achievement of written individual and corporate objectives such as the Board shall determine. Upon the attainment of such performance objectives, in addition to your consulting fee, you shall be entitled to a cash bonus in an amount to be determined by the Board with a target of forty percent (40%) of your consulting fee. Within thirty (30) days after the Start Date, the Board shall establish written individual and corporate performance objectives for the balance of 2014 and the amount of the performance pro-rata bonus payable upon the attainment of each objective. At least thirty (30) days before each subsequent calendar year, the Board shall establish written individual and corporate performance objectives for such calendar year and the amount of the performance bonus payable upon the attainment of such objectives. Within sixty (60) days after the end of each calendar year, the Board shall determine the amount of any performance bonus payable hereunder. Any such performance bonus shall be due and payable within ninety (90) days after the end of the calendar year to which it relates. During the Term of this Agreement, your performance cash bonus shall be at least at the same amount as the performance cash bonus paid to CEO of the Company. For example, if the CEO's receives a performance cash bonus of \$140,000, the Consultant shall also receive a performance cash bonus of \$140,000. For the avoidance of doubt, the Board at its discretion may also pay the Consultant a performance cash bonus greater than the performance cash bonus paid to the CEO.

( c ) Stock Option Grant. The Board has agreed to grant to you an option to purchase common shares of the Company(the "Grant"). The Grant will consist of an option grant to purchase 280,000 (two hundred and eighty thousand common shares of the Company). The Grant shall be subject to the vesting schedule below.

(i) Stock Options. Such options will have an exercise price equal to \$6.23 (six dollars and twenty-three cents), the closing price of the Company's common stock on the date of board approval of the grant, September 23, 2014, which is equal to fair market value as determined by the Board on the date of the grant (the "Grant date"). During the Term of this Agreement, you shall also be awarded stock option and/or restricted stock grants at least at the same amount as such stock option and/or restricted stock that is granted to the CEO. For example, if the CEO's receives a stock option grant that is exercisable for 100,000 shares, the Consultant shall also receive a stock option grant that is exercisable for 100,000 shares. For the avoidance of doubt, the Board at its discretion may also grant the Consultant options and/or restricted stock that exceed the number of options and /or restricted stock granted to the CEO.

(ii) Vesting Schedule of the Grant. Two percent (2%) of the Grant shall vest each month from the grant Date until fully vested in accordance with the provisions of the Company's Amended and Restated 2013 Stock Plan, subject to your continuing service with the Company. The options will be incentive stock options or stock to the maximum extent allowed by the tax code and will be subject to the terms of the Company's Amended and Restated 2013 Stock Plan and corresponding Stock Option Agreement between you and the Company. If contract is terminated before the term expires for any reason the options will vest fully upon termination or change of control.

## 5. Benefits.

a. Benefit Plan – Health Insurance, Retirement and Stock Option Plan. The Company will provide you with the opportunity to participate in the standard benefits plans. The Company reserves the right to cancel and/or change the benefits plans it offers to its participants at any time, subject to applicable law.

b. Other Benefits. The Company will provide you with standard business reimbursements (including mileage, supplies, long distance calls), subject to Company policies and procedures and with appropriate receipts. In addition, you will receive any other statutory benefits required by law.

c. Reimbursement of Expenses. You shall be reimbursed for all normal items of travel and entertainment and miscellaneous expenses reasonably incurred by you on behalf of the Company provided such expenses are documented and submitted in accordance with the reimbursement policies in effect from time to time.

6. Confidential Information and Invention Assignment Agreement. Your acceptance of this offer and commencement of the consulting arrangement with the Company is contingent upon the execution, and delivery to an officer of the Company, of the Company's Confidential Information and Invention Assignment Agreement, a copy of which is enclosed for your review and execution (the "Confidentiality Agreement"), prior to or on your Start Date.

7. Term. The Term of your consulting arrangement shall be a period of five (5) years from the Start Date.

8. Non-Solicitation. You agree that during the term of your consulting arrangement with the Company, and for a period of 12 months following the cessation of consultancy with the Company for any reason or no reason, you shall not directly or indirectly solicit, induce, recruit or encourage any of the Company's employees or consultants to terminate their relationship with the Company, or attempt any of the foregoing, either for yourself or any other person or entity. For a period of 12 months following cessation of your consulting arrangement with the Company for any reason or no reason, you shall not attempt to negatively influence any of the Company's clients or customers from purchasing Company products or services or to solicit or influence or attempt to influence any client, customer or other person either directly or indirectly, to direct his or its purchase of products and/or services to any person, firm, corporation, institution or other entity in competition with the business of the Company.

9. Arbitration. Any dispute or claim arising out of or in connection with your employment with the Company (except with regard to enforcement of the Confidentiality Agreement) will be finally settled by arbitration in New York, New York in accordance with the Commercial Arbitration Rules of the American Arbitration Association by one arbitrator appointed in accordance with said rules. Judgment on the award rendered by the arbitrator may be entered in any court having jurisdiction thereof. The parties agree that this Agreement evidences a transaction involving interstate commerce and that the operation, interpretation and enforcement of this arbitration provision, the procedures to be used in conducting an arbitration pursuant to this arbitration provision, and the confirmation of any award issued to either party by reason of such arbitration, is governed exclusively by the Federal Arbitration Act, 9 U.S.C. § 21 et seq. Notwithstanding the foregoing, the parties may apply to any court of competent jurisdiction for preliminary or interim equitable relief, or to compel arbitration in accordance with this paragraph, without breach of this arbitration provision.

10. Miscellaneous. This Agreement, together with the Confidentiality Agreement, sets forth the terms of your employment with the Company and supersedes any prior representations or agreements, whether written or oral. This Agreement may not be modified or amended except by a written agreement, signed by the Company and by you. Whenever possible, each provision of this Agreement will be interpreted in such manner as to be effective and valid under applicable law, but if any provision of this Agreement is held to be invalid, illegal or unenforceable in any respect under any applicable law or rule in any jurisdiction, such invalidity, illegality or unenforceability will be lessened or reduced to the extent possible or will be severed and will not affect any other provision and this Agreement will be reformed, construed and enforced in such jurisdiction as if such invalid, illegal or unenforceable provision had never been contained herein. This Agreement will be governed by New York law without reference to rules of conflicts of law. All notices, requests, demands and other communications called for hereunder shall be in writing and shall be deemed given (i) on the date of delivery if delivered personally, (ii) one (1) day after being sent by a well established commercial overnight service, (iii) three (3) days after being mailed by registered or certified mail, return receipt requested, prepaid and addressed to the parties or their successors at the following addresses, or at such other addresses as the parties may later designate in writing, (iv) upon confirmation of facsimile transfer, if sent by facsimile or (v) upon confirmation of delivery when directed to the electronic mail address set forth below, if sent by electronic mail:

If to the Company:        546 Fifth Avenue, 14<sup>th</sup> Floor  
New York, NY 10036

If to you:                    40 East 89<sup>th</sup> Street, Apt. 7A  
New York, NY 10128

We are all delighted to be able to extend you this offer and look forward to working with you. To indicate your acceptance of the Company's offer, please sign and date this letter in the space provided below along with a signed and dated copy of the Confidentiality Agreement.

Very truly yours,

**ACTINIUM PHARMACEUTICALS, INC.**

By: /s/ Kaushik J. Dave  
Kaushik J. Dave  
President and Chief Executive  
Board Member

Dated: March 11, 2015

ACCEPTED AND AGREED:

**SANDESH SETH**

/s/ Sandesh Seth

Dated: March 11, 2015



**ACTINIUM PHARMACEUTICALS, INC. AMENDED AND RESTATED 2013  
EQUITY INCENTIVE PLAN**

1. Purpose; Eligibility.

1.1 General Purpose. The name of this plan is the Actinium Pharmaceuticals, Inc. 2013 Equity Incentive Plan (the "**Plan**"). The purposes of the Plan are to (a) enable Actinium Pharmaceuticals, Inc., a Delaware corporation (the "**Company**"), and any Affiliate to attract and retain the types of Employees, Consultants and Directors who will contribute to the Company's long range success; (b) provide incentives that align the interests of Employees, Consultants and Directors with those of the shareholders of the Company; and (c) promote the success of the Company's business.

1.2 Eligible Award Recipients. The persons eligible to receive Awards are the Employees, Consultants and Directors of the Company and its Affiliates and such other individuals designated by the Committee who are reasonably expected to become Employees, Consultants and Directors after the receipt of Awards.

1.3 Available Awards. Awards that may be granted under the Plan include: (a) Restricted Awards, (b) Performance Share Awards, and (c) Performance Compensation Awards.

2. Definitions.

"**Affiliate**" means a corporation or other entity that, directly or through one or more intermediaries, controls, is controlled by or is under common control with, the Company.

"**Applicable Laws**" means the requirements related to or implicated by the administration of the Plan under applicable state corporate law, United States federal and state securities laws, the Code, any stock exchange or quotation system on which the shares of Common Stock are listed or quoted, and the applicable laws of any foreign country or jurisdiction where Awards are granted under the Plan.

"**Award**" means any right granted under the Plan, including a Restricted Award, a Performance Share Award or a Performance Compensation Award.

"**Award Agreement**" means a written agreement, contract, certificate or other instrument or document evidencing the terms and conditions of an individual Award granted under the Plan which may, in the discretion of the Company, be transmitted electronically to any Participant. Each Award Agreement shall be subject to the terms and conditions of the Plan.

"**Beneficial Owner**" has the meaning assigned to such term in Rule 13d-3 and Rule 13d-5 under the Exchange Act, except that in calculating the beneficial ownership of any particular "person" (as that term is used in Section 13(d)(3) of the Exchange Act), such "person" shall be deemed to have beneficial ownership of all securities that such "person" has the right to acquire by conversion or exercise of other securities, whether such right is currently exercisable or is exercisable only after the passage of time. The terms "Beneficially Owns" and "Beneficially Owned" have a corresponding meaning.

"**Board**" means the Board of Directors of the Company, as constituted at any time.

"**Cause**" means:

With respect to any Employee or Consultant: (a) If the Employee or Consultant is a party to an employment or service agreement with the Company or its Affiliates and such agreement provides for a definition of Cause, the definition contained therein; or (b) If no such agreement exists, or if such agreement does not define Cause: (i) the commission of, or plea of guilty or no contest to, a felony or a crime involving moral turpitude or the commission of any other act involving willful malfeasance or material fiduciary breach with respect to the Company or an Affiliate; (ii) conduct that results in or is reasonably likely to result in harm to the reputation or business of the Company or any of its Affiliates; (iii) gross negligence or willful misconduct with respect to the Company or an Affiliate; or (iv) material violation of state or federal securities laws.

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With respect to any Director, a determination by a majority of the disinterested Board members that the Director has engaged in any of the following: (a) malfeasance in office; (b) gross misconduct or neglect; (c) false or fraudulent misrepresentation inducing the director's appointment; (d) wilful conversion of corporate funds; or (e) repeated failure to participate in Board meetings on a regular basis despite having received proper notice of the meetings in advance.

The Committee, in its absolute discretion, shall determine the effect of all matters and questions relating to whether a Participant has been discharged for Cause.

**"Change in Control"** (a) The direct or indirect sale, transfer, conveyance or other disposition (other than by way of merger or consolidation), in one or a series of related transactions, of all or substantially all of the properties or assets of the Company and its subsidiaries, taken as a whole, to any Person that is not a subsidiary of the Company; (b) The Incumbent Directors cease for any reason to constitute at least a majority of the Board; (c) The date which is 10 business days prior to the consummation of a complete liquidation or dissolution of the Company; (d) The acquisition by any Person of Beneficial Ownership of 50% or more (on a fully diluted basis) of either (i) the then outstanding shares of Common Stock of the Company, taking into account as outstanding for this purpose such Common Stock issuable upon the exercise of options or warrants, the conversion of convertible stock or debt, and the exercise of any similar right to acquire such Common Stock (the "Outstanding Company Common Stock") or (ii) the combined voting power of the then outstanding voting securities of the Company entitled to vote generally in the election of directors (the "Outstanding Company Voting Securities"); provided, however, that for purposes of this Plan, the following acquisitions shall not constitute a Change in Control: (A) any acquisition by the Company or any Affiliate, (B) any acquisition by any employee benefit plan sponsored or maintained by the Company or any subsidiary, (C) any acquisition which complies with clauses, (i), (ii) and (iii) of subsection (e) of this definition or (D) in respect of an Award held by a particular Participant, any acquisition by the Participant or any group of persons including the Participant (or any entity controlled by the Participant or any group of persons including the Participant); or (e) The consummation of a reorganization, merger, consolidation, statutory share exchange or similar form of corporate transaction involving the Company that requires the approval of the Company's shareholders, whether for such transaction or the issuance of securities in the transaction (a "Business Combination"), unless immediately following such Business Combination: (i) more than 50% of the total voting power of (A) the entity resulting from such Business Combination (the "Surviving Company"), or (B) if applicable, the ultimate parent entity that directly or indirectly has beneficial ownership of sufficient voting securities eligible to elect a majority of the members of the board of directors (or the analogous governing body) of the Surviving Company (the "Parent Company"), is represented by the Outstanding Company Voting Securities that were outstanding immediately prior to such Business Combination (or, if applicable, is represented by shares into which the Outstanding Company Voting Securities were converted pursuant to such Business Combination), and such voting power among the holders thereof is in substantially the same proportion as the voting power of the Outstanding Company Voting Securities among the holders thereof immediately prior to the Business Combination; (ii) no Person (other than any employee benefit plan sponsored or maintained by the Surviving Company or the Parent Company) is or becomes the Beneficial Owner, directly or indirectly, of 50% or more of the total voting power of the outstanding voting securities eligible to elect members of the board of directors of the Parent Company (or the analogous governing body) (or, if there is no Parent Company, the Surviving Company); and (iii) at least a majority of the members of the board of directors (or the analogous governing body) of the Parent Company (or, if there is no Parent Company, the Surviving Company) following the consummation of the Business Combination were Board members at the time of the Board's approval of the execution of the initial agreement providing for such Business Combination.

**"Code"** means the Internal Revenue Code of 1986, as it may be amended from time to time. Any reference to a section of the Code shall be deemed to include a reference to any regulations promulgated thereunder.

**"Committee"** means a committee of one or more members of the Board appointed by the Board to administer the Plan in accordance with *Section 3.3* and *Section 3.4*.

"**Common Stock**" means the common stock, \$0.001 par value per share, of the Company, or such other securities of the Company as may be designated by the Committee from time to time in substitution thereof.

"**Company**" means Actinium Pharmaceuticals, Inc. a Delaware corporation, and any successor thereto.

"**Consultant**" means any individual who is engaged by the Company or any Affiliate to render consulting or advisory services.

"**Continuous Service**" means that the Participant's service with the Company or an Affiliate, whether as an Employee, Consultant or Director, is not interrupted or terminated. The Participant's Continuous Service shall not be deemed to have terminated merely because of a change in the capacity in which the Participant renders service to the Company or an Affiliate as an Employee, Consultant or Director or a change in the entity for which the Participant renders such service, *provided that* there is no interruption or termination of the Participant's Continuous Service; *provided further that* if any Award is subject to Section 409A of the Code, this sentence shall only be given effect to the extent consistent with Section 409A of the Code. For example, a change in status from an Employee of the Company to a Director of an Affiliate will not constitute an interruption of Continuous Service. The Committee or its delegate, in its sole discretion, may determine whether Continuous Service shall be considered interrupted in the case of any leave of absence approved by that party, including sick leave, military leave or any other personal or family leave of absence.

"**Covered Employee**" has the same meaning as set forth in Section 162(m)(3) of the Code, as interpreted by *Internal Revenue Service (www.practicallaw.com/0-382-3556)* Notice 2007-49.

"**Director**" means a member of the Board.

"**Effective Date**" shall mean the date as of which this Plan is adopted by the Board.

"**Employee**" means any person, including an Officer or Director, employed by the Company or an Affiliate. Mere service as a Director or payment of a director's fee by the Company or an Affiliate shall not be sufficient to constitute "employment" by the Company or an Affiliate.

"**Exchange Act**" means the Securities Exchange Act of 1934, as amended.

"**Fair Market Value**" means, as of any date, the value of the Common Stock as determined below. If the Common Stock is listed on any established stock exchange or a national market system, including without limitation, the OTCBB, the New York Stock Exchange or the NASDAQ Stock Market, the Fair Market Value shall be the closing price of a share of Common Stock (or if no sales were reported the closing price on the date immediately preceding such date) as quoted on such exchange or system on the day of determination, as reported in the *Wall Street Journal* or such other source as the Committee deems reliable. In the absence of an established market for the Common Stock, the Fair Market Value shall be determined in good faith by the Committee and such determination shall be conclusive and binding on all persons.

"**Grant Date**" means the date on which the Committee adopts a resolution, or takes other appropriate action, expressly granting an Award to a Participant that specifies the key terms and conditions of the Award or, if a later date is set forth in such resolution, then such date as is set forth in such resolution.

"**Incumbent Directors**" means individuals who, on the Effective Date, constitute the Board, *provided that* any individual becoming a Director subsequent to the Effective Date whose election or nomination for election to the Board was approved by a vote of at least two-thirds of the Incumbent Directors then on the Board (either by a specific vote or by approval of the proxy statement of the Company in which such person is named as a nominee for Director without objection to such nomination) shall be an Incumbent Director. No individual initially elected or nominated as a director of the Company as a result of an actual or threatened election contest with respect to Directors or as a result of any other actual or threatened solicitation of proxies by or on behalf of any person other than the Board shall be an Incumbent Director.

**"Negative Discretion"** means the discretion authorized by the Plan to be applied by the Committee to eliminate or reduce the size of a Performance Compensation Award in accordance with Section 7.4(d)(iv) of the Plan; *provided, that*, the exercise of such discretion would not cause the Performance Compensation Award to fail to qualify as "performance-based compensation" under Section 162(m) of the Code.

**"Non-Employee Director"** means a Director who is a "non-employee director" within the meaning of Rule 16b-3.

**"Officer"** means a person who is an officer of the Company within the meaning of Section 16 of the Exchange Act and the rules and regulations promulgated thereunder.

**"Outside Director"** means a Director who is an "outside director" within the meaning of Section 162(m) of the Code and Treasury Regulations Section 1.162-27(e)(3) or any successor to such statute and regulation.

**"Participant"** means an eligible person to whom an Award is granted pursuant to the Plan or, if applicable, such other person who holds an outstanding Award.

**"Performance Compensation Award"** means any Award designated by the Committee as a Performance Compensation Award pursuant to Section 7.4 of the Plan.

**"Performance Criteria"** means the criterion or criteria that the Committee shall select for purposes of establishing the Performance Goal(s) for a Performance Period with respect to any Performance Compensation Award under the Plan. The Performance Criteria that will be used to establish the Performance Goal(s) shall be based on the attainment of specific levels of performance of the Company (or Affiliate, division, business unit or operational unit of the Company) and shall be limited to the following: (a) net earnings or net income (before or after taxes); (b) basic or diluted earnings per share (before or after taxes); (c) net revenue or net revenue growth; (d) gross revenue; (e) gross profit or gross profit growth; (f) net operating profit (before or after taxes); (g) return on assets, capital, invested capital, equity, or sales; (h) cash flow (including, but not limited to, operating cash flow, free cash flow, and cash flow return on capital); (i) earnings before or after taxes, interest, depreciation and/or amortization; (j) gross or operating margins; (k) improvements in capital structure; (l) budget and expense management; (m) productivity ratios; (n) economic value added or other value added measurements; (o) share price (including, but not limited to, growth measures and total shareholder return); (p) expense targets; (q) margins; (r) operating efficiency; (s) working capital targets; (t) enterprise value; (u) safety record; and (v) completion of acquisitions or business expansion.

Any one or more of the Performance Criteria may be used on an absolute or relative basis to measure the performance of the Company and/or an Affiliate as a whole or any division, business unit or operational unit of the Company and/or an Affiliate or any combination thereof, as the Committee may deem appropriate, or as compared to the performance of a group of comparable companies, or published or special index that the Committee, in its sole discretion, deems appropriate, or the Committee may select Performance Criterion (o) above as compared to various stock market indices. The Committee also has the authority to provide for accelerated vesting of any Award based on the achievement of Performance Goals pursuant to the Performance Criteria specified in this paragraph. To the extent required under Section 162(m) of the Code, the Committee shall, within the first 90 days of a Performance Period (or, if longer or shorter, within the maximum period allowed under Section 162(m) of the Code), define in an objective fashion the manner of calculating the Performance Criteria it selects to use for such Performance Period. In the event that applicable tax and/or securities laws change to permit the Committee discretion to alter the governing Performance Criteria without obtaining shareholder approval of such changes, the Committee shall have sole discretion to make such changes without obtaining shareholder approval.

**"Performance Formula"** means, for a Performance Period, the one or more objective formulas applied against the relevant Performance Goal to determine, with regard to the Performance Compensation Award of a particular Participant, whether all, some portion but less than all, or none of the Performance Compensation Award has been earned for the Performance Period.

**"Performance Goals"** means, for a Performance Period, the one or more goals established by the Committee for the Performance Period based upon the Performance Criteria. The Committee is authorized at any time during the first 90 days of a Performance Period (or, if longer or shorter, within the maximum period allowed under Section 162(m) of the Code), or at any time thereafter (but only to the extent the exercise of such authority after such period would not cause the Performance Compensation Awards granted to any Participant for the Performance Period to fail to qualify as "performance-based compensation" under Section 162(m) of the Code), in its sole and absolute discretion, to adjust or modify the calculation of a Performance Goal for such Performance Period to the extent permitted under Section 162(m) of the Code in order to prevent the dilution or enlargement of the rights of Participants based on the following events: (a) asset write-downs; (b) litigation or claim judgments or settlements; (c) the effect of changes in tax laws, accounting principles, or other laws or regulatory rules affecting reported results; (d) any reorganization and restructuring programs; (e) extraordinary nonrecurring items as described in Accounting Principles Board Opinion No. 30 (or any successor or pronouncement thereto) and/or in management's discussion and analysis of financial condition and results of operations appearing in the Company's annual report to shareholders for the applicable year; (f) acquisitions or divestitures; (g) any other specific unusual or nonrecurring events, or objectively determinable category thereof; (h) foreign exchange gains and losses; and (i) a change in the Company's fiscal year.

**"Performance Period"** means the one or more periods of time not less than one fiscal quarter in duration, as the Committee may select, over which the attainment of one or more Performance Goals will be measured for the purpose of determining a Participant's right to and the payment of a Performance Compensation Award.

**"Performance Share Award"** means any Award granted pursuant to **Section 7.3** hereof.

**"Performance Share"** means the grant of a right to receive a number of actual shares of Common Stock or share units based upon the performance of the Company during a Performance Period, as determined by the Committee.

**"Plan"** means this Actinium Pharmaceuticals, Inc. 2013 Equity Incentive Plan, as amended and/or amended and restated from time to time.

**"Restricted Award"** means any Award granted pursuant to **Section 7.2(a)**.

**"Restricted Period"** has the meaning set forth in **Section 7.2(a)**.

**"Rule 16b-3"** means Rule 16b-3 promulgated under the Exchange Act or any successor to Rule 16b-3, as in effect from time to time.

**"Securities Act"** means the Securities Act of 1933, as amended.

### 3. Administration.

3.1 Authority of Committee. The Plan shall be administered by the Committee or, in the Board's sole discretion, by the Board. Subject to the terms of the Plan, the Committee's charter and Applicable Laws, and in addition to other express powers and authorization conferred by the Plan, the Committee shall have the authority:

- (a) to construe and interpret the Plan and apply its provisions;
- (b) to promulgate, amend, and rescind rules and regulations relating to the administration of the Plan;
- (c) to authorize any person to execute, on behalf of the Company, any instrument required to carry out the purposes of the Plan;
- (d) to delegate its authority to one or more Officers of the Company with respect to Awards that do not involve Covered Employees or "insiders" within the meaning of Section 16 of the Exchange Act;

- (e) to determine when Awards are to be granted under the Plan and the applicable Grant Date;
- (f) from time to time to select, subject to the limitations set forth in this Plan, those Participants to whom Awards shall be granted;
- (g) to determine the number of shares of Common Stock to be made subject to each Award;
- (h) to prescribe the terms and conditions of each Award, including, without limitation, the exercise price and medium of payment and vesting provisions, and to specify the provisions of the Award Agreement relating to such grant;
- (i) to determine the target number of Performance Shares to be granted pursuant to a Performance Share Award, the performance measures that will be used to establish the performance goals, the performance period(s) and the number of Performance Shares earned by a Participant;
- (j) to designate an Award (including a cash bonus) as a Performance Compensation Award and to select the Performance Criteria that will be used to establish the Performance Goals;
- (k) to amend any outstanding Awards, including for the purpose of modifying the time or manner of vesting, or the term of any outstanding Award; *provided, however*, that if any such amendment impairs a Participant's rights or increases a Participant's obligations under his or her Award or creates or increases a Participant's federal income tax liability with respect to an Award, such amendment shall also be subject to the Participant's consent;
- (l) to determine the duration and purpose of leaves of absences which may be granted to a Participant without constituting termination of their employment for purposes of the Plan, which periods shall be no shorter than the periods generally applicable to Employees under the Company's employment policies;
- (m) to make decisions with respect to outstanding Awards that may become necessary upon a change in corporate control or an event that triggers anti-dilution adjustments;
- (n) to interpret, administer, reconcile any inconsistency in, correct any defect in and/or supply any omission in the Plan and any instrument or agreement relating to, or Award granted under, the Plan; and
- (o) to exercise discretion to make any and all other determinations which it determines to be necessary or advisable for the administration of the Plan.

The Committee also may modify the purchase price or the exercise price of any outstanding Award, *provided that* if the modification effects a repricing, shareholder approval shall be required before the repricing is effective.

3.2 Committee Decisions Final. All decisions made by the Committee pursuant to the provisions of the Plan shall be final and binding on the Company and the Participants, unless such decisions are determined by a court having jurisdiction to be arbitrary and capricious.

3.3 Delegation. The Committee, or if no Committee has been appointed, the Board, may delegate administration of the Plan to a committee or committees of one or more members of the Board, and the term "**Committee**" shall apply to any person or persons to whom such authority has been delegated. The Committee shall have the power to delegate to a subcommittee any of the administrative powers the Committee is authorized to exercise (and references in this Plan to the Board or the Committee shall thereafter be to the committee or subcommittee), subject, however, to such resolutions, not inconsistent with the provisions of the Plan, as may be adopted from time to time by the Board. The Board may abolish the Committee at any time and revert in the Board the administration of the Plan. The members of the Committee shall be appointed by and serve at the pleasure of the Board. From time to time, the Board may increase or decrease the size of the Committee, add additional members to, remove members (with or without cause) from, appoint new members in substitution therefor, and fill vacancies, however caused, in the Committee. The Committee shall act pursuant to a vote of the majority of its members or, in the case of a Committee comprised of only two members, the unanimous consent of its members, whether present or not, or by the written consent of the majority of its members and minutes shall be kept of all of its meetings and copies thereof shall be provided to the Board. Subject to the limitations prescribed by the Plan and the Board, the Committee may establish and follow such rules and regulations for the conduct of its business as it may determine to be advisable.

3.4 Committee Composition. Except as otherwise determined by the Board, the Committee shall consist solely of two or more Non-Employee Directors who are also Outside Directors. The Board shall have discretion to determine whether or not it intends to comply with the exemption requirements of Rule 16b-3 and/or Section 162(m) of the Code. However, if the Board intends to satisfy such exemption requirements, with respect to Awards to any Covered Employee and with respect to any insider subject to Section 16 of the Exchange Act, the Committee shall be a compensation committee of the Board that at all times consists solely of two or more Non-Employee Directors who are also Outside Directors. Within the scope of such authority, the Board or the Committee may (a) delegate to a committee of one or more members of the Board who are not Outside Directors the authority to grant Awards to eligible persons who are either (i) not then Covered Employees and are not expected to be Covered Employees at the time of recognition of income resulting from such Award or (ii) not persons with respect to whom the Company wishes to comply with Section 162(m) of the Code or (b) delegate to a committee of one or more members of the Board who are not Non-Employee Directors the authority to grant Awards to eligible persons who are not then subject to Section 16 of the Exchange Act. Nothing herein shall create an inference that an Award is not validly granted under the Plan in the event Awards are granted under the Plan by a compensation committee of the Board that does not at all times consist solely of two or more Non-Employee Directors who are also Outside Directors.

3.5 Indemnification. In addition to such other rights of indemnification as they may have as Directors or members of the Committee, and to the extent allowed by Applicable Laws, the Committee shall be indemnified by the Company against the reasonable expenses, including attorney's fees, actually incurred in connection with any action, suit or proceeding or in connection with any appeal therein, to which the Committee may be party by reason of any action taken or failure to act under or in connection with the Plan or any Award granted under the Plan, and against all amounts paid by the Committee in settlement thereof (*provided, however*, that the settlement has been approved by the Company, which approval shall not be unreasonably withheld) or paid by the Committee in satisfaction of a judgment in any such action, suit or proceeding, except in relation to matters as to which it shall be adjudged in such action, suit or proceeding that such Committee did not act in good faith and in a manner which such person reasonably believed to be in the best interests of the Company, or in the case of a criminal proceeding, had no reason to believe that the conduct complained of was unlawful; *provided, however*, that within 60 days after institution of any such action, suit or proceeding, such Committee shall, in writing, offer the Company the opportunity at its own expense to handle and defend such action, suit or proceeding.

#### 4. Shares Subject to the Plan.

4.1 Subject to adjustment in accordance with **Section 11**, a total of 1,000,000 shares of Common Stock shall be available for the grant of Awards under the Plan. During the terms of the Awards, the Company shall keep available at all times the number of shares of Common Stock required to satisfy such Awards.

4.2 Shares of Common Stock available for distribution under the Plan may consist, in whole or in part, of authorized and unissued shares, treasury shares or shares reacquired by the Company in any manner.

4.3 Any shares of Common Stock subject to an Award that is canceled, forfeited or expires prior to exercise or realization, either in full or in part, shall again become available for issuance under the Plan. Notwithstanding anything to the contrary contained herein: shares subject to an Award under the Plan shall not again be made available for issuance or delivery under the Plan if such shares are delivered or withheld by the Company to satisfy any tax withholding obligation.

#### 5. Eligibility.

5.1 Eligibility for Specific Awards. Awards may be granted to Employees, Consultants and Directors and those individuals whom the Committee determines are reasonably expected to become Employees, Consultants and Directors following the Grant Date.

6. Intentionally left blank.

7. Provisions of Awards.

7.1 Intentionally left blank.

7.2 Restricted Awards.

(a) **General**

A Restricted Award is an Award of actual shares of Common Stock ("**Restricted Stock**") or hypothetical Common Stock units ("**Restricted Stock Units**") having a value equal to the Fair Market Value of an identical number of shares of Common Stock, which may, but need not, provide that such Restricted Award may not be sold, assigned, transferred or otherwise disposed of, pledged or hypothecated as collateral for a loan or as security for the performance of any obligation or for any other purpose for such period (the "**Restricted Period**") as the Committee shall determine. Each Restricted Award granted under the Plan shall be evidenced by an Award Agreement. Each Restricted Award so granted shall be subject to the conditions set forth in this Section 7.2, and to such other conditions not inconsistent with the Plan as may be reflected in the applicable Award Agreement.

(b) **Restricted Stock and Restricted Stock Units**

- (i) Each Participant granted Restricted Stock shall execute and deliver to the Company an Award Agreement with respect to the Restricted Stock setting forth the restrictions and other terms and conditions applicable to such Restricted Stock. If the Committee determines that the Restricted Stock shall be held by the Company or in escrow rather than delivered to the Participant pending the release of the applicable restrictions, the Committee may require the Participant to additionally execute and deliver to the Company (A) an escrow agreement satisfactory to the Committee, if applicable and (B) the appropriate blank stock power with respect to the Restricted Stock covered by such agreement. If a Participant fails to execute an agreement evidencing an Award of Restricted Stock and, if applicable, an escrow agreement and stock power, the Award shall be null and void. Subject to the restrictions set forth in the Award, the Participant generally shall have the rights and privileges of a shareholder as to such Restricted Stock, including the right to vote such Restricted Stock and the right to receive dividends; *provided that*, any cash dividends and stock dividends with respect to the Restricted Stock shall be withheld by the Company for the Participant's account, and interest may be credited on the amount of the cash dividends withheld at a rate and subject to such terms as determined by the Committee. The cash dividends or stock dividends so withheld by the Committee and attributable to any particular share of Restricted Stock (and earnings thereon, if applicable) shall be distributed to the Participant in cash or, at the discretion of the Committee, in shares of Common Stock having a Fair Market Value equal to the amount of such dividends, if applicable, upon the release of restrictions on such share and, if such share is forfeited, the Participant shall have no right to such dividends.
- (ii) The terms and conditions of a grant of Restricted Stock Units shall be reflected in an Award Agreement. No shares of Common Stock shall be issued at the time a Restricted Stock Unit is granted, and the Company will not be required to set aside a fund for the payment of any such Award. A Participant shall have no voting rights with respect to any Restricted Stock Units granted hereunder. At the discretion of the Committee, each Restricted Stock Unit (representing one share of Common Stock) may be credited with cash and stock dividends paid by the Company in respect of one share of Common Stock ("**Dividend Equivalents**"). Dividend Equivalents shall be withheld by the Company for the Participant's account, and interest may be credited on the amount of cash Dividend Equivalents withheld at a rate and subject to such terms as determined by the Committee. Dividend Equivalents credited to a Participant's account and attributable to any particular Restricted Stock Unit (and earnings thereon, if applicable) shall be distributed in cash or, at the discretion of the Committee, in shares of Common Stock having a Fair Market Value equal to the amount of such Dividend Equivalents and earnings, if applicable, to the Participant upon settlement of such Restricted Stock Unit and, if such Restricted Stock Unit is forfeited, the Participant shall have no right to such Dividend Equivalents.

(c) **Restrictions**

- (i) Restricted Stock awarded to a Participant shall be subject to the following restrictions until the expiration of the Restricted Period, and to such other terms and conditions as may be set forth in the applicable Award Agreement: (A) if an escrow arrangement is used, the Participant shall not be entitled to delivery of the stock certificate; (B) the shares shall be subject to the restrictions on transferability set forth in the Award Agreement; (C) the shares shall be subject to forfeiture to the extent provided in the applicable Award Agreement; and (D) to the extent such shares are forfeited, the stock certificates shall be returned to the Company, and all rights of the Participant to such shares and as a shareholder with respect to such shares shall terminate without further obligation on the part of the Company.
- (ii) Restricted Stock Units awarded to any Participant shall be subject to (A) forfeiture until the expiration of the Restricted Period, and satisfaction of any applicable Performance Goals during such period, to the extent provided in the applicable Award Agreement, and to the extent such Restricted Stock Units are forfeited, all rights of the Participant to such Restricted Stock Units shall terminate without further obligation on the part of the Company and (B) such other terms and conditions as may be set forth in the applicable Award Agreement.
- (iii) The Committee shall have the authority to remove any or all of the restrictions on the Restricted Stock and Restricted Stock Units whenever it may determine that, by reason of changes in Applicable Laws or other changes in circumstances arising after the date the Restricted Stock or Restricted Stock Units are granted, such action is appropriate.

(d) **Restricted Period**

With respect to Restricted Awards, the Restricted Period shall commence on the Grant Date and end at the time or times set forth on a schedule established by the Committee in the applicable Award Agreement.

No Restricted Award may be granted or settled for a fraction of a share of Common Stock. The Committee may, but shall not be required to, provide for an acceleration of vesting in the terms of any Award Agreement upon the occurrence of a specified event.

(e) **Delivery of Restricted Stock and Settlement of Restricted Stock Units**

Upon the expiration of the Restricted Period with respect to any shares of Restricted Stock, the restrictions set forth in **Section 7.2(c)** and the applicable Award Agreement shall be of no further force or effect with respect to such shares, except as set forth in the applicable Award Agreement. If an escrow arrangement is used, upon such expiration, the Company shall deliver to the Participant, or his or her beneficiary, without charge, the stock certificate evidencing the shares of Restricted Stock which have not then been forfeited and with respect to which the Restricted Period has expired (to the nearest full share) and any cash dividends or stock dividends credited to the Participant's account with respect to such Restricted Stock and the interest thereon, if any. Upon the expiration of the Restricted Period with respect to any outstanding Restricted Stock Units, the Company shall deliver to the Participant, or his or her beneficiary, without charge, one share of Common Stock for each such outstanding Restricted Stock Unit ("**Vested Unit**") and cash equal to any Dividend Equivalents credited with respect to each such Vested Unit in accordance with **Section 7.2(b)(ii)** hereof and the interest thereon or, at the discretion of the Committee, in shares of Common Stock having a Fair Market Value equal to such Dividend Equivalents and the interest thereon, if any; *provided, however*, that, if explicitly provided in the applicable Award Agreement, the Committee may, in its sole discretion, elect to pay cash or part cash and part Common Stock in lieu of delivering only shares of Common Stock for Vested Units. If a cash payment is made in lieu of delivering shares of Common Stock, the amount of such payment shall be equal to the Fair Market Value of the Common Stock as of the date on which the Restricted Period lapsed with respect to each Vested Unit.

**(f) Stock Restrictions**

Each certificate representing Restricted Stock awarded under the Plan shall bear a legend in such form as the Company deems appropriate.

**7.3 Performance Share Awards.**

**(a) Grant of Performance Share Awards**

Each Performance Share Award granted under the Plan shall be evidenced by an Award Agreement. Each Performance Share Award so granted shall be subject to the conditions set forth in this Section 7.3, and to such other conditions not inconsistent with the Plan as may be reflected in the applicable Award Agreement. The Committee shall have the discretion to determine: (i) the number of shares of Common Stock or stock-denominated units subject to a Performance Share Award granted to any Participant; (ii) the performance period applicable to any Award; (iii) the conditions that must be satisfied for a Participant to earn an Award; and (iv) the other terms, conditions and restrictions of the Award.

**(b) Earning Performance Share Awards**

The number of Performance Shares earned by a Participant will depend on the extent to which the performance goals established by the Committee are attained within the applicable Performance Period, as determined by the Committee. No payout shall be made with respect to any Performance Share Award except upon written certification by the Committee that the minimum threshold performance goal(s) have been achieved.

**7.4 Performance Compensation Awards.**

**(a) General**

The Committee shall have the authority, at the time of grant of any Award described in this Plan, to designate such Award as a Performance Compensation Award in order to qualify such Award as "performance-based compensation" under Section 162(m) of the Code. In addition, the Committee shall have the authority to make an Award of a cash bonus to any Participant and designate such Award as a Performance Compensation Award in order to qualify such Award as "performance-based compensation" under Section 162(m) of the Code.

**(b) Eligibility**

The Committee will, in its sole discretion, designate within the first 90 days of a Performance Period (or, if longer or shorter, within the maximum period allowed under Section 162(m) of the Code) which Participants will be eligible to receive Performance Compensation Awards in respect of such Performance Period. However, designation of a Participant eligible to receive an Award hereunder for a Performance Period shall not in any manner entitle the Participant to receive payment in respect of any Performance Compensation Award for such Performance Period. The determination as to whether or not such Participant becomes entitled to payment in respect of any Performance Compensation Award shall be decided solely in accordance with the provisions of this Section 7.4. Moreover, designation of a Participant eligible to receive an Award hereunder for a particular Performance Period shall not require designation of such Participant eligible to receive an Award hereunder in any subsequent Performance Period and designation of one person as a Participant eligible to receive an Award hereunder shall not require designation of any other person as a Participant eligible to receive an Award hereunder in such period or in any other period.

**(c) Discretion of Committee with Respect to Performance Compensation Awards**

With regard to a particular Performance Period, the Committee shall have full discretion to select the length of such Performance Period (provided any such Performance Period shall be not less than one fiscal quarter in duration), the type(s) of Performance Compensation Awards to be issued, the Performance Criteria that will be used to establish the Performance Goal(s), the kind(s) and/or level(s) of the Performance Goal(s) that is (are) to apply to the Company and the Performance Formula. Within the first 90 days of a Performance Period (or, if longer or shorter, within the maximum period allowed under Section 162(m) of the Code), the Committee shall, with regard to the Performance Compensation Awards to be issued for such Performance Period, exercise its discretion with respect to each of the matters enumerated in the immediately preceding sentence of this Section 7.4(c) and record the same in writing.

**(d) Payment of Performance Compensation Awards**

(i) Condition to Receipt of Payment

Unless otherwise provided in the applicable Award Agreement, a Participant must be employed by the Company on the last day of a Performance Period to be eligible for payment in respect of a Performance Compensation Award for such Performance Period.

(ii) Limitation

A Participant shall be eligible to receive payment in respect of a Performance Compensation Award only to the extent that: (A) the Performance Goals for such period are achieved; and (B) the Performance Formula as applied against such Performance Goals determines that all or some portion of such Participant's Performance Compensation Award has been earned for the Performance Period.

(iii) Certification

Following the completion of a Performance Period, the Committee shall review and certify in writing whether, and to what extent, the Performance Goals for the Performance Period have been achieved and, if so, calculate and certify in writing the amount of the Performance Compensation Awards earned for the period based upon the Performance Formula. The Committee shall then determine the actual size of each Participant's Performance Compensation Award for the Performance Period and, in so doing, may apply Negative Discretion in accordance with Section 7.4(d)(iv) hereof, if and when it deems appropriate.

(iv) Use of Discretion

In determining the actual size of an individual Performance Compensation Award for a Performance Period, the Committee may reduce or eliminate the amount of the Performance Compensation Award earned under the Performance Formula in the Performance Period through the use of Negative Discretion if, in its sole judgment, such reduction or elimination is appropriate. The Committee shall not have the discretion to (A) grant or provide payment in respect of Performance Compensation Awards for a Performance Period if the Performance Goals for such Performance Period have not been attained or (B) increase a Performance Compensation Award above the maximum amount payable under Section 7.4(d)(vi) of the Plan.

(v) Timing of Award Payments

Performance Compensation Awards granted for a Performance Period shall be paid to Participants as soon as administratively practicable following completion of the certifications required by this Section 7.4 but in no event later than 2 1/2 months following the end of the fiscal year during which the Performance Period is completed.

(vi) Maximum Award Payable

Notwithstanding any provision contained in this Plan to the contrary, the maximum Performance Compensation Award payable to any one Participant under the Plan for a Performance Period is 1,000,000 shares of Common Stock or, in the event such Performance Compensation Award is paid in cash, the equivalent cash value thereof on the first or last day of the Performance Period to which such Award relates, as determined by the Committee. The maximum amount that can be paid in any calendar year to any Participant pursuant to a cash bonus Award described in the last sentence of **Section 7.4(a)** shall be \$150,000. Furthermore, any Performance Compensation Award that has been deferred shall not (between the date as of which the Award is deferred and the payment date) increase (A) with respect to a Performance Compensation Award that is payable in cash, by a measuring factor for each fiscal year greater than a reasonable rate of interest set by the Committee or (B) with respect to a Performance Compensation Award that is payable in shares of Common Stock, by an amount greater than the appreciation of a share of Common Stock from the date such Award is deferred to the payment date.

8 . Securities Law Compliance. Each Award Agreement shall provide that no shares of Common Stock shall be purchased or sold thereunder unless and until (a) any then applicable requirements of state or federal laws and regulatory agencies have been fully complied with to the satisfaction of the Company and its counsel and (b) if required to do so by the Company, the Participant has executed and delivered to the Company a letter of investment intent in such form and containing such provisions as the Committee may require. The Company shall use reasonable efforts to seek to obtain from each regulatory commission or agency having jurisdiction over the Plan such authority as may be required to grant Awards and to issue and sell shares of Common Stock upon exercise of the Awards; *provided, however,* that this undertaking shall not require the Company to register under the Securities Act the Plan, any Award or any Common Stock issued or issuable pursuant to any such Award. If, after reasonable efforts, the Company is unable to obtain from any such regulatory commission or agency the authority which counsel for the Company deems necessary for the lawful issuance and sale of Common Stock under the Plan, the Company shall be relieved from any liability for failure to issue and sell Common Stock upon exercise of such Awards unless and until such authority is obtained.

9. Use of Proceeds from Stock. Proceeds from the sale of Common Stock pursuant to Awards, or upon exercise thereof, shall constitute general funds of the Company.

10. Miscellaneous.

10.1 Acceleration of Exercisability and Vesting. The Committee shall have the power to accelerate the time at which an Award may first be exercised or the time during which an Award or any part thereof will vest in accordance with the Plan, notwithstanding the provisions in the Award stating the time at which it may first be exercised or the time during which it will vest.

10.2 Shareholder Rights. Except as provided in the Plan or an Award Agreement, no Participant shall be deemed to be the holder of, or to have any of the rights of a holder with respect to, any shares of Common Stock subject to such Award unless and until such Participant has satisfied all requirements for exercise of the Award pursuant to its terms and no adjustment shall be made for dividends (ordinary or extraordinary, whether in cash, securities or other property) or distributions of other rights for which the record date is prior to the date such Common Stock certificate is issued, except as provided in **Section 11** hereof.

10.3 No Employment or Other Service Rights. Nothing in the Plan or any instrument executed or Award granted pursuant thereto shall confer upon any Participant any right to continue to serve the Company or an Affiliate in the capacity in effect at the time the Award was granted or shall affect the right of the Company or an Affiliate to terminate (a) the employment of an Employee with or without notice and with or without Cause or (b) the service of a Director pursuant to the By-laws of the Company or an Affiliate, and any applicable provisions of the corporate law of the state in which the Company or the Affiliate is incorporated, as the case may be.

10.4 Transfer; Approved Leave of Absence. For purposes of the Plan, no termination of employment by an Employee shall be deemed to result from either (a) a transfer to the employment of the Company from an Affiliate or from the Company to an Affiliate, or from one Affiliate to another, or (b) an approved leave of absence for military service or sickness, or for any other purpose approved by the Company, if the Employee's right to reemployment is guaranteed either by a statute or by contract or under the policy pursuant to which the leave of absence was granted or if the Committee otherwise so provides in writing, in either case, except to the extent inconsistent with Section 409A of the Code if the applicable Award is subject thereto.

10.5 Withholding Obligations. To the extent provided by the terms of an Award Agreement and subject to the discretion of the Committee, the Participant may satisfy any federal, state or local tax withholding obligation relating to the exercise or acquisition of Common Stock under an Award by any of the following means (in addition to the Company's right to withhold from any compensation paid to the Participant by the Company) or by a combination of such means: (a) tendering a cash payment; (b) authorizing the Company to withhold shares of Common Stock from the shares of Common Stock otherwise issuable to the Participant as a result of the exercise or acquisition of Common Stock under the Award, *provided, however*, that no shares of Common Stock are withheld with a value exceeding the minimum amount of tax required to be withheld by law; or (c) delivering to the Company previously owned and unencumbered shares of Common Stock of the Company.

11. Adjustments Upon Changes in Stock. In the event of changes in the outstanding Common Stock or in the capital structure of the Company by reason of any stock or extraordinary cash dividend, stock split, reverse stock split, an extraordinary corporate transaction such as any recapitalization, reorganization, merger, consolidation, combination, exchange, or other relevant change in capitalization occurring after the Grant Date of any Award, Awards granted under the Plan and any Award Agreements, the maximum number of shares of Common Stock subject to all Awards stated in **Section 4** and the maximum number of shares of Common Stock with respect to which any one person may be granted Awards during any period stated in **Section 4** and Section 7.4(d)(vi) will be equitably adjusted or substituted, as to the number, price or kind of a share of Common Stock or other consideration subject to such Awards to the extent necessary to preserve the economic intent of such Award. Any adjustments made under this Section 11 shall be made in a manner which does not adversely affect the exemption provided pursuant to Rule 16b-3 under the Exchange Act. Further, with respect to Awards intended to qualify as "performance-based compensation" under Section 162(m) of the Code, any adjustments or substitutions will not cause the Company to be denied a tax deduction on account of Section 162(m) of the Code. The Company shall give each Participant notice of an adjustment hereunder and, upon notice, such adjustment shall be conclusive and binding for all purposes.

12. Effect of Change in Control.

12.1 Unless otherwise provided in an Award Agreement, notwithstanding any provision of the Plan to the contrary:

(a) With respect to Performance Compensation Awards, in the event of a Change in Control, all incomplete Performance Periods in respect of such Award in effect on the date the Change in Control occurs shall end on the date of such change and the Committee shall (i) determine the extent to which Performance Goals with respect to each such Performance Period have been met based upon such audited or unaudited financial information then available as it deems relevant and (ii) cause to be paid to the applicable Participant partial or full Awards with respect to Performance Goals for each such Performance Period based upon the Committee's determination of the degree of attainment of Performance Goals or, if not determinable, assuming that the applicable "target" levels of performance have been attained, or on such other basis determined by the Committee.

To the extent practicable, any actions taken by the Committee under the immediately preceding clauses (a) shall occur in a manner and at a time which allows affected Participants the ability to participate in the Change in Control with respect to the shares of Common Stock subject to their Awards.

12.2 In addition, in the event of a Change in Control, the Committee may in its discretion and upon at least 10 days' advance notice to the affected persons, cancel any outstanding Awards and pay to the holders thereof, in cash or stock, or any combination thereof, the value of such Awards based upon the price per share of Common Stock received or to be received by other shareholders of the Company in the event.

12.3 The obligations of the Company under the Plan shall be binding upon any successor corporation or organization resulting from the merger, consolidation or other reorganization of the Company, or upon any successor corporation or organization succeeding to all or substantially all of the assets and business of the Company and its Affiliates, taken as a whole.

13. Amendment of the Plan and Awards.

13.1 Amendment of Plan. The Board at any time, and from time to time, may amend or terminate the Plan. However, except as provided in **Section 11** relating to adjustments upon changes in Common Stock and **Section 13.3**, no amendment shall be effective unless approved by the shareholders of the Company to the extent shareholder approval is necessary to satisfy any Applicable Laws. At the time of such amendment, the Board shall determine, upon advice from counsel, whether such amendment will be contingent on shareholder approval.

13.2 Shareholder Approval. The Board may, in its sole discretion, submit any other amendment to the Plan for shareholder approval, including, but not limited to, amendments to the Plan intended to satisfy the requirements of Section 162(m) of the Code and the regulations thereunder regarding the exclusion of performance-based compensation from the limit on corporate deductibility of compensation paid to certain executive officers.

13.3 Intentionally left blank.

13.4 No Impairment of Rights. Rights under any Award granted before amendment of the Plan shall not be impaired by any amendment of the Plan unless (a) the Company requests the consent of the Participant and (b) the Participant consents in writing.

13.5 Amendment of Awards. The Committee at any time, and from time to time, may amend the terms of any one or more Awards; *provided, however*, that the Committee may not affect any amendment which would otherwise constitute an impairment of the rights under any Award unless (a) the Company requests the consent of the Participant and (b) the Participant consents in writing.

14. General Provisions.

14.1 Forfeiture Events. The Committee may specify in an Award Agreement that the Participant's rights, payments and benefits with respect to an Award shall be subject to reduction, cancellation, forfeiture or recoupment upon the occurrence of certain events, in addition to applicable vesting conditions of an Award. Such events may include, without limitation, breach of non-competition, non-solicitation, confidentiality, or other restrictive covenants that are contained in the Award Agreement or otherwise applicable to the Participant, a termination of the Participant's Continuous Service for Cause, or other conduct by the Participant that is detrimental to the business or reputation of the Company and/or its Affiliates.

14.2 Other Compensation Arrangements. Nothing contained in this Plan shall prevent the Board from adopting other or additional compensation arrangements, subject to shareholder approval if such approval is required; and such arrangements may be either generally applicable or applicable only in specific cases.

14.3 Sub-plans. The Committee may from time to time establish sub-plans under the Plan for purposes of satisfying blue sky, securities, tax or other laws of various jurisdictions in which the Company intends to grant Awards. Any sub-plans shall contain such limitations and other terms and conditions as the Committee determines are necessary or desirable. All sub-plans shall be deemed a part of the Plan, but each sub-plan shall apply only to the Participants in the jurisdiction for which the sub-plan was designed.

14.4 Deferral of Awards. The Committee may establish one or more programs under the Plan to permit selected Participants the opportunity to elect to defer receipt of consideration upon exercise of an Award, satisfaction of performance criteria, or other event that absent the election would entitle the Participant to payment or receipt of shares of Common Stock or other consideration under an Award. The Committee may establish the election procedures, the timing of such elections, the mechanisms for payments of, and accrual of interest or other earnings, if any, on amounts, shares or other consideration so deferred, and such other terms, conditions, rules and procedures that the Committee deems advisable for the administration of any such deferral program.

14.5 Unfunded Plan. The Plan shall be unfunded. Neither the Company, the Board nor the Committee shall be required to establish any special or separate fund or to segregate any assets to assure the performance of its obligations under the Plan.

14.6 Recapitalizations. Each Award Agreement shall contain provisions required to reflect the provisions of *Section 11*.

14.7 Delivery. Upon exercise of a right granted under this Plan, the Company shall issue Common Stock or pay any amounts due within a reasonable period of time thereafter. Subject to any statutory or regulatory obligations the Company may otherwise have, for purposes of this Plan, 30 days shall be considered a reasonable period of time.

14.8 No Fractional Shares. No fractional shares of Common Stock shall be issued or delivered pursuant to the Plan. The Committee shall determine whether cash, additional Awards or other securities or property shall be issued or paid in lieu of fractional shares of Common Stock or whether any fractional shares should be rounded, forfeited or otherwise eliminated.

14.9 Other Provisions. The Award Agreements authorized under the Plan may contain such other provisions not inconsistent with this Plan, including, without limitation, restrictions upon the exercise of the Awards, as the Committee may deem advisable.

14.10 Section 409A. The Plan is intended to comply with Section 409A of the Code to the extent subject thereto, and, accordingly, to the maximum extent permitted, the Plan shall be interpreted and administered to be in compliance therewith. Any payments described in the Plan that are due within the "short-term deferral period" as defined in Section 409A of the Code shall not be treated as deferred compensation unless Applicable Laws require otherwise. Notwithstanding anything to the contrary in the Plan, to the extent required to avoid accelerated taxation and tax penalties under Section 409A of the Code, amounts that would otherwise be payable and benefits that would otherwise be provided pursuant to the Plan during the six (6) month period immediately following the Participant's termination of Continuous Service shall instead be paid on the first payroll date after the six-month anniversary of the Participant's separation from service (or the Participant's death, if earlier). Notwithstanding the foregoing, neither the Company nor the Committee shall have any obligation to take any action to prevent the assessment of any excise tax or penalty on any Participant under Section 409A of the Code and neither the Company nor the Committee will have any liability to any Participant for such tax or penalty.

14.11 Section 16. It is the intent of the Company that the Plan satisfy, and be interpreted in a manner that satisfies, the applicable requirements of Rule 16b-3 as promulgated under Section 16 of the Exchange Act so that Participants will be entitled to the benefit of Rule 16b-3, or any other rule promulgated under Section 16 of the Exchange Act, and will not be subject to short-swing liability under Section 16 of the Exchange Act. Accordingly, if the operation of any provision of the Plan would conflict with the intent expressed in this Section 14.11, such provision to the extent possible shall be interpreted and/or deemed amended so as to avoid such conflict.

14.12 Section 162(m). To the extent the Committee issues any Award that is intended to be exempt from the deduction limitation of Section 162(m) of the Code, the Committee may, without shareholder or grantee approval, amend the Plan or the relevant Award Agreement retroactively or prospectively to the extent it determines necessary in order to comply with any subsequent clarification of Section 162(m) of the Code required to preserve the Company's federal income tax deduction for compensation paid pursuant to any such Award.

14.13 Beneficiary Designation. Each Participant under the Plan may from time to time name any beneficiary or beneficiaries by whom any right under the Plan is to be exercised in case of such Participant's death. Each designation will revoke all prior designations by the same Participant, shall be in a form reasonably prescribed by the Committee and shall be effective only when filed by the Participant in writing with the Company during the Participant's lifetime.

14.14 Expenses. The costs of administering the Plan shall be paid by the Company.

14.15 Severability. If any of the provisions of the Plan or any Award Agreement is held to be invalid, illegal or unenforceable, whether in whole or in part, such provision shall be deemed modified to the extent, but only to the extent, of such invalidity, illegality or unenforceability and the remaining provisions shall not be affected thereby.

14.16 Plan Headings. The headings in the Plan are for purposes of convenience only and are not intended to define or limit the construction of the provisions hereof.

14.17 Non-Uniform Treatment. The Committee's determinations under the Plan need not be uniform and may be made by it selectively among persons who are eligible to receive, or actually receive, Awards. Without limiting the generality of the foregoing, the Committee shall be entitled to make non-uniform and selective determinations, amendments and adjustments, and to enter into non-uniform and selective Award Agreements.

15. Effective Date of Plan. The Plan shall become effective as of the Effective Date.

16. Termination or Suspension of the Plan. The Plan shall terminate automatically on September 9, 2023. No Award shall be granted pursuant to the Plan after such date, but Awards theretofore granted may extend beyond that date. The Board may suspend or terminate the Plan at any earlier date pursuant to **Section 13.1** hereof. No Awards may be granted under the Plan while the Plan is suspended or after it is terminated. Unless the Company determines to submit **Section 7.4** of the Plan and the definition of "Performance Goal" and "Performance Criteria" to the Company's shareholders at the first shareholder meeting that occurs in the fifth year following the year in which the Plan was last approved by shareholders (or any earlier meeting designated by the Board), in accordance with the requirements of Section 162(m) of the Code, and such shareholder approval is obtained, then no further Performance Compensation Awards shall be made to Covered Employees under **Section 7.4** after the date of such annual meeting, but the Plan may continue in effect for Awards to Participants not in accordance with Section 162(m) of the Code.

17. Choice of Law. The law of the State of Delaware shall govern all questions concerning the construction, validity and interpretation of this Plan, without regard to such state's conflict of law rules.

As adopted by the Board of Directors of Actinium Pharmaceuticals, Inc. on September 9, 2013.

Subsidiaries

MedActinium, Inc., a Delaware company

**Consent of Independent Registered Public Accounting Firm**

We consent to the incorporation by reference in the Registration Statement on Form S-3 (File No. 333-194768) and Form S-8 (File No. 333-197283) filed with the Securities and Exchange Commission, of our report dated March 16, 2015, relating to the consolidated financial statements of Actinium Pharmaceuticals, Inc. as of December 31, 2014 and 2013 and for the years then ended and relating to the internal controls over financial reporting for the year ended December 31, 2014, appearing in this Annual Report on Form 10-K of Actinium Pharmaceuticals, Inc.

/s/ GBH CPAs, PC

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

March 16, 2015

**CERTIFICATION OF PRINCIPAL EXECUTIVE OFFICER PURSUANT TO 18U.S.C SECTION 1350 AS ADOPTED  
PURSUANT TO SECTION 302 OF THE SARBANES-OXELY ACT OF 2002**

I, Kaushik J. Dave, certify that:

1. I have reviewed this report on Form 10-K of Actinium Pharmaceuticals, Inc. for the fiscal year ended December 31, 2014.
2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;
3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the registrant as of, and for, the periods presented in this report;
4. The registrant's other certifying officer(s) and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f)) for the registrant and have:
  - (a) Designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;
  - (b) Designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles;
  - (c) Evaluated the effectiveness of the registrant's disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and
  - (d) Disclosed in this report any change in the registrant's internal control over financial reporting that occurred during the registrant's most recent fiscal quarter (the registrant's fourth fiscal quarter in the case of an annual report) that has materially affected, or is reasonably likely to materially affect, the registrant's internal control over financial reporting; and
5. The registrant's other certifying officer(s) and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the registrant's auditors and the audit committee of the registrant's board of directors (or persons performing the equivalent functions):
  - (a) All significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the registrant's ability to record, process, summarize and report financial information; and
  - (b) Any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant's internal control over financial reporting.

/s/ Kaushik J. Dave

Kaushik J. Dave  
President and Chief Executive Officer  
(Principal Executive Officer)

Date: March 16, 2015

**CERTIFICATION OF PRINCIPAL FINANCIAL AND ACCOUNTING OFFICER  
PURSUANT TO 18 U.S.C SECTION 1350 AS ADOPTED  
PURSUANT TO SECTION 302 OF THE SARBANES-OXELY ACT OF 2002**

I, Kaushik J. Dave, certify that:

1. I have reviewed this report on Form 10-K of Actinium Pharmaceuticals, Inc. for the fiscal year ended December 31, 2014.
2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;
3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the registrant as of, and for, the periods presented in this report;
4. The registrant's other certifying officer(s) and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f)) for the registrant and have:
  - (a) Designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;
  - (b) Designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles;
  - (c) Evaluated the effectiveness of the registrant's disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and
  - (d) Disclosed in this report any change in the registrant's internal control over financial reporting that occurred during the registrant's most recent fiscal quarter (the registrant's fourth fiscal quarter in the case of an annual report) that has materially affected, or is reasonably likely to materially affect, the registrant's internal control over financial reporting; and
5. The registrant's other certifying officer(s) and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the registrant's auditors and the audit committee of the registrant's board of directors (or persons performing the equivalent functions):
  - (a) All significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the registrant's ability to record, process, summarize and report financial information; and
  - (b) Any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant's internal control over financial reporting.

/s/ Kaushik J. Dave

Kaushik J. Dave  
Interim Chief Financial Officer  
(Principal Financial and Accounting Officer)

Date: March 16, 2015

**CERTIFICATION OF PRINCIPAL EXECUTIVE OFFICER, PURSUANT TO  
18 U.S.C. SECTION 1350, AS ADOPTED PURSUANT TO  
SECTION 906 OF THE SARBANES-OXLEY ACT OF 2002**

In connection with the Annual Report of Actinium Pharmaceuticals, Inc. a Delaware corporation (the "Company"), on Form 10-K for the period ended December 31, 2014 as filed with the Securities and Exchange Commission (the "Report"), I, Kaushik J. Dave, President and Chief Executive Officer of the Company, certify, pursuant to Section 906 of the Sarbanes-Oxley Act of 2002, 18 U.S.C. Section 1350), that to my knowledge:

(1) The Report fully complies with the requirements of section 13(a) or 15(d) of the Securities Exchange Act of 1934 (15 U.S.C. 78m or 78o(d)); and

(2) The information contained in the Report fairly presents, in all material respects, the financial condition and results of operations of the Company.

/s/ Kaushik J. Dave

Kaushik J. Dave

President and Chief Executive Officer

(Principal Executive Officer)

Date: March 16, 2015

**CERTIFICATION OF PRINCIPAL FINANCIAL AND ACCOUNTING OFFICER, PURSUANT TO  
18 U.S.C. SECTION 1350, AS ADOPTED PURSUANT TO  
SECTION 906 OF THE SARBANES-OXLEY ACT OF 2002**

In connection with the Annual Report of Actinium Pharmaceuticals, Inc. a Delaware corporation (the "Company"), on Form 10-K for the period ended December 31, 2014 as filed with the Securities and Exchange Commission (the "Report"), I, Kaushik J. Dave, Interim Chief Financial Officer of the Company, certify, pursuant to Section 906 of the Sarbanes-Oxley Act of 2002, 18 U.S.C. Section 1350), that to my knowledge:

(1) The Report fully complies with the requirements of section 13(a) or 15(d) of the Securities Exchange Act of 1934 (15 U.S.C. 78m or 78o(d)); and

(2) The information contained in the Report fairly presents, in all material respects, the financial condition and results of operations of the Company.

/s/ Kaushik J. Dave

Kaushik J. Dave

Interim Chief Financial Officer

(Principal Financial and Accounting Officer)

Date: March 16, 2015