

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

October 3, 2017

VIA EDGAR

Irene Paik  
Dorrie Yale  
Division of Corporation Finance  
Office of Healthcare & Insurance  
Securities and Exchange Commission  
100 F Street N.E.  
Washington, D.C. 20549

**Re: Actinium Pharmaceuticals, Inc.  
Form 10-K for the Fiscal Year Ended December 31, 2016  
Filed March 16, 2017  
File No. 001-36374**

Dear Ms. Paik and Ms. Yale:

We are in receipt of your comment letter dated September 26, 2017 regarding the above referenced filing. As requested in your letter, we have provided responses to the questions raised by the staff. For your convenience, the comments are listed below, followed by Actinium Pharmaceuticals, Inc.'s responses:

Form 10-K for the Fiscal Year Ended December 31, 2016

Item 1. Business

Summary of Material Agreements Related to our Business, page 8

1. In future filings, please expand your discussion of your material agreements to provide a description of the term and termination provisions of such agreements. If the term of the agreement coincides with the royalty term, which is connected to patent expiration, please also disclose any material patent expiration dates. If applicable, and if the royalty term is different from the term of the agreement, please also disclose the royalty term.

**RESPONSE:** In future filings, where applicable, we will expand our discussion of our material agreements to provide a description of the term and termination provisions of such agreements. If the term of the agreement coincides with the royalty term, which is connected to patent expiration, we will also disclose any material patent expiration dates. If applicable, and if the royalty term is different from the term of the agreement, we will also disclose the royalty term.

Intellectual Property Portfolio, page 10

2. In future filings, please revise your discussion of your patent portfolio to provide the following information for each material patent or patent family:
  - Specific products, product groups and technologies to which such patents relate;
  - Type of patent protection such as composition of matter, use or process;
  - Patent expiration dates;
  - Identification of applicable jurisdictions; and
  - Contested proceedings and/or third-party claims, if any.

**RESPONSE:** In future filings, where applicable, we will revise our discussion of our patent portfolio to provide the information listed above for each material patent or patent family.

Sincerely,

Actinium Pharmaceuticals, Inc.

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