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## Actinium Pharmaceuticals Announces Collaborative Research Partnership with Astellas Leveraging Actinium's AWE Platform Technology

*- Collaborative research agreement will utilize Actinium's AWE Technology Platform to generate Actinium Radio-Conjugates on selected Astellas targeting agents*

*- Actinium to perform preclinical validation studies on novel Actinium Radio-Conjugates under this agreement*

NEW YORK, March 28, 2018 (GLOBE NEWSWIRE) -- **Actinium Pharmaceuticals, Inc.** (NYSE AMERICAN:ATNM) ("Actinium" or "the Company"), announced today that it has entered into a research and option agreement with Astellas Pharma Inc. ("Astellas") to develop Actinium-225 Radio-Conjugates (ARCs) using its Actinium Warhead Enabling (AWE) Platform Technology. Under this collaboration, Actinium will utilize its AWE Platform to conjugate and label selected Astellas targeting agents with the powerful actinium-225 ( $^{225}\text{Ac}$ ) payload. Actinium will also be responsible for conducting preclinical validation studies on the novel ARCs generated. Actinium will receive a seven-digit payment which includes upfront fee and research funding from Astellas.

Dr. Dale Ludwig, Actinium's Chief Scientific Officer said, "We are thrilled to be working with Astellas, a global leader at the forefront of healthcare innovation on this exciting collaboration. This further showcases the value of Actinium's AWE technology by enabling biomolecules with the potent cell killing power of  $^{225}\text{Ac}$ . Our AWE Platform introduces a novel and complementary mechanism of action which is supported by significant preclinical and clinical data. We are well positioned to execute on this exciting collaboration and look forward to advancing the field of Actinium-225 Radio-Conjugates through this collaboration with Astellas."

Actinium formally launched its AWE Program in November 2017 to facilitate collaborations and partnerships where the Company's intellectual property, know-how and expertise related to its AWE Platform Technology could be leveraged. This collaboration with Astellas comes on the heels of Actinium's recent successful demonstration of the capabilities of its AWE Platform Technology where superior cell killing properties of the  $^{225}\text{Ac}$ -enabled CD38 targeting blockbuster drug daratumumab or Darzalex<sup>TM</sup> was presented in a poster presentation at [ASH 2017](#). Additional data on this ARC will be presented at the upcoming AACR 2018 conference. The AWE Program provides Astellas with access to Actinium's proprietary ARC technology, its technical know-how, expertise and research infrastructure to

enable efficient execution of the collaborative research program.

Actinium's Chairman and Chief Executive Officer, Sandesh Seth added, "Actinium is a leader in the field of Actinium Radio-Conjugates and the only company with end to end research, drug development, supply chain and regulatory expertise that is not captive or affiliated with a large pharmaceutical company. We have significantly increased our research and development capabilities by adding strategically to our team, infrastructure and intellectual property portfolio, which facilitated this collaboration with Astellas. Our team is incredibly excited and motivated by the progress we are making with our existing myeloablation and therapeutic clinical trials, the expected launch of the Actimab-MDS trial and the technology validation resulting from this AWE Program collaboration with Astellas."

### **About Our Actinium Warhead Enabling Platform Technology**

The Actinium Warhead Enabling (AWE) Program has at its centerpiece the AWE Platform Technology. The Company's proprietary AWE Platform Technology is supported by intellectual property and know-how that enables the creation of Actinium-225 ( $^{225}\text{Ac}$ ) Radio-Conjugates (ARCs) wherein a biomolecular targeting agent is stably labeled with the powerful  $^{225}\text{Ac}$  payload to enhance targeted cell killing. The AWE Platform is protected by intellectual property covering the use of the "gold standard" chelator DOTA, and any conceivable derivative thereof. Additionally, Actinium holds intellectual property protection covering methods of chelation or labeling of the targeting agent with  $^{225}\text{Ac}$ , including newer next-generation methodologies for chelation of  $^{225}\text{Ac}$ .

The AWE Program is structured to provide the opportunity for partners or collaborators to derive maximum value from a collaboration by leveraging Actinium's extensive technical know-how, access to its ARC drug development infrastructure and to its underlying AWE Platform Technology. The AWE Program provides a partner or collaborator with access to Actinium's knowledge bank and infrastructure allowing collaborators to benefit from accelerated development timelines for its ARCs.

To learn more about the AWE Technology Platform or the AWE Program please contact Keisha Thomas, Ph.D., Corporate Development at [kthomas@actiniumpharma.com](mailto:kthomas@actiniumpharma.com).

### **About Actinium Pharmaceuticals, Inc.**

Actinium Pharmaceuticals Inc. is a clinical-stage biopharmaceutical company focused on developing and commercializing targeted therapies for potentially superior myeloablation and conditioning of the bone marrow prior to a bone marrow transplant and for the targeting and killing of cancer cells. Our targeted therapies have demonstrated the potential to result in significantly improved access to bone marrow transplant with better outcomes, namely increased marrow engraftment and survival. Our targeted radioimmunotherapy approach combines the targeting ability of monoclonal antibodies with the cell killing ability of radioisotopes. We have four clinical trials based on our AWE or Actinium Warhead Enabling Technology Platform that utilizes the alpha emitting isotope actinium-225 ( $^{225}\text{Ac}$ ) to produce Actinium-225 Radio-Conjugates (ARCs). In addition, our most advanced drug product candidate lomab-B, an antibody radio conjugate developed by the Fred Hutchinson Cancer Research Center, is comprised of an anti-CD45 monoclonal antibody labeled with iodine-131. We are currently conducting a pivotal Phase 3 trial of lomab-B for myeloablation and

conditioning of the bone marrow prior to a bone marrow transplant for patients with relapsed or refractory acute myeloid leukemia (AML) age 55 and older. A bone marrow transplant is a potentially curative treatment for patients with AML and other blood cancers including leukemias, lymphomas and multiple myeloma as well as certain blood disorders. Iomab-B has been tested in several of these other cancers with over five hundred patients treated in several Phase 1 and 2 trials with promising results. Upon successful completion of our Phase 3 clinical trial for Iomab-B we intend to submit this candidate for marketing approval in the U.S. and European Union where it has been designated as an Orphan Drug. We are also developing a potentially best in class CD33 program using an ARC comprised of the anti-CD33 monoclonal antibody lintuzumab labeled with actinium-225. Our most advanced CD33 program candidate, Actimab-A, is currently in a Phase 2 clinical trial for patients over the age of 60 who are newly diagnosed with AML and ineligible for standard induction chemotherapy. Actimab-A also benefits from Orphan Drug designation in the US and EU. Actimab-M, our second CD33 program ARC, is being studied in a Phase 1 trial for patients with refractory multiple myeloma. Actinium is also planning a Phase 2 trial for Actimab-MDS, our third CD33 program candidate, as a conditioning regimen prior to a bone marrow transplant for patients with MDS that have a p53 genetic mutation. Our Phase 1 trial studying Actimab-A with CLAG-M is our fourth CD33 program clinical trial for patients with relapsed or refractory AML. Our AWE or Actinium Warhead Enabling Technology Platform, originally developed in conjunction with Memorial Sloan Kettering Cancer Center, is focused on leveraging Actinium's know how and intellectual property to create additional ARC drug candidates by labeling  $^{225}\text{Ac}$  to targeting moieties that we will either progress in clinical trials ourselves or out-license.

More information is available at [www.actiniumpharma.com](http://www.actiniumpharma.com) and our Twitter feed @ActiniumPharma, [www.twitter.com/actiniumpharma](https://www.twitter.com/actiniumpharma).

### **Forward-Looking Statements for Actinium Pharmaceuticals, Inc.**

This press release may contain projections or other "forward-looking statements" within the meaning of the "safe-harbor" provisions of the private securities litigation reform act of 1995 regarding future events or the future financial performance of the Company which the Company undertakes no obligation to update. These statements are based on management's current expectations and are subject to risks and uncertainties that may cause actual results to differ materially from the anticipated or estimated future results, including the risks and uncertainties associated with preliminary study results varying from final results, estimates of potential markets for drugs under development, clinical trials, actions by the FDA and other governmental agencies, regulatory clearances, responses to regulatory matters, the market demand for and acceptance of Actinium's products and services, performance of clinical research organizations and other risks detailed from time to time in Actinium's filings with the Securities and Exchange Commission (the "SEC"), including without limitation its most recent annual report on form 10-K, subsequent quarterly reports on Forms 10-Q and Forms 8-K, each as amended and supplemented from time to time.

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