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Actinium Successfully Completes Second Module of Collaborative Research Program with Astellas; Third Module Initiated

- Actinium's AWE Technology Platform is Being Applied to Generate Antibody Radiation-Conjugates with Select Astellas Targeting Agents

NEW YORK, March 29, 2019 /PRNewswire/ --**Actinium Pharmaceuticals, Inc.** (NYSE AMERICAN: ATNM) announced today that it has successfully completed the second module of its previously announced research and option agreement with Astellas Pharma Inc. and that the third module has been initiated. In this collaboration, Actinium is utilizing its Antibody Warhead Enabling (AWE) technology platform to conjugate and label select targeting agents owned by Astellas with the potent alpha-particle emitting payload Actinium-225 (Ac-225) and conducting preclinical research that is being funded by Astellas.

Actinium is a leader in the field of Ac-225 based therapies given its significant clinical experience with this novel class of alpha particle radioimmunotherapy as well as broad patents, know-how and trade secrets covering Ac-225 technology, the use of DOTA, the "gold standard" chelator or linker, composition, manufacturing and methods of use. Actinium leverages its Ac-225 intellectual property and know-how through its AWE platform to create Antibody Radiation-Conjugates (ARC's) to develop its clinical pipeline and to drive its research and development efforts including its ongoing collaboration with Astellas. Actinium recently provided an update on its intellectual property portfolio which is comprised of 111 issued and pending patents spread across 28 patent families in the United States and internationally. The estate covers ARC generation, composition of matter, formulations, methods of administration for solid and liquid cancers and radionuclide manufacturing.

Dr. Dale Ludwig, Actinium's Chief Scientific Officer, who is leading the Collaborative Research Program with Astellas, said, "We continue to be excited by the progress we've made in this collaboration with Astellas and we strongly value this relationship with them. Our team is highly motivated and committed to complete the third and final module of our collaboration. It is our intent to solidify Ac-225's use as a preferred radioisotope payload, taking advantage of its highly differentiated attributes. The advancement of this collaboration with Astellas is a strong step in that direction. To that end, we are constantly striving to improve upon our AWE capabilities, for ourselves and for our partners, to deliver the best

possible therapies for patients."

Sandesh Seth, Actinium's Chairman and CEO, said, "As our first collaboration with our AWE platform, it is exciting to see this progression of our research and option agreement with Astellas to the final module. AWE is a valuable tool in our armamentarium and we are dedicated to continuing to invest in all facets of our capabilities including R&D, intellectual property, supply chain and manufacturing to best serve our collaborators. With strong recognition and acceptance for the field of targeted radiotherapies marked by recent drug approvals and acquisitions, we are confident that these investments will yield positive returns. In addition, and most importantly, we are confident that new ARC-based therapies will be created that will have the potential to better patient outcomes."

Antibody Warhead Enabling Technology Platform

The Antibody Warhead Enabling (AWE) technology platform is based on Actinium's extensive clinical experience, intellectual property portfolio of over 110 patents, technical know-how and trade secrets that enables the creation of ARC's or Antibody Radiation Conjugates, wherein a biomolecular targeting agent is stably labeled with the powerful Ac-225 payload to enhance targeted cell killing. Actinium has the ability to work with multiple targeting agents and multiple isotopes, has research and manufacturing capabilities and a clinical supply chain that has serviced more than 30 distinct trial sites in the United States and Canada.

Actinium provides access to its technology platform through its AWE Program, which 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 technology platform. 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 Eileen Geoghegan, Ph.D., at egeoghegan@actiniumpharma.com.

About Actinium Pharmaceuticals, Inc.

Actinium Pharmaceuticals Inc. is focused on improving patient access and outcomes to cellular therapies such as BMT or Bone Marrow Transplant and CAR-T with its proprietary, chemotherapy free, targeted conditioning technology. Actinium is the only company with a multi-disease, multi-target, drug development pipeline focused on targeted conditioning. Its targeted conditioning technology is enabled by ARC's or Antibody Radiation-Conjugates that combine the targeting ability of monoclonal antibodies with the cell killing ability of radioisotopes. Actinium's pipeline of clinical-stage targeted conditioning ARC's are designed to target the antigens CD45 and CD33 for patients with a broad range of hematologic malignancies including AML or Acute Myeloid Leukemia, MDS or Myelodysplastic Syndrome and MM or Multiple Myeloma.

Iomab-B, Actinium's lead targeted conditioning product candidate, is currently enrolling patients in the pivotal Phase 3 SIERRA trial in patients age 55 and older, with active, relapsed or refractory AML. Iomab-B (Iodine-131 apamistamab), combines the anti-CD45

monoclonal antibody labeled with iodine-131 for myeloablation prior to a bone marrow transplant. CD45 is expressed on leukemia, lymphoma and normal immune cells. Iomab-B has been studied in over 300 patients in 10 clinical trials in numerous hematologic diseases. Actinium's Iomab-ACT program is an expansion of its CD45 program that is intended to be a universal, chemotherapy-free solution for targeted lymphodepletion prior to CAR-T. Through targeted lymphodepletion, the Iomab-ACT program is expected to improve CAR-T cell expansion, reduce CAR-T related toxicities and expand patient access to CAR-T treatment and potentially other adoptive cell therapies. Due to its lower payload dose, lymphodepletion with the Iomab-ACT program may be accomplished through a single outpatient infusion. Actinium intends to advance its Iomab-ACT program with CAR-T focused collaborators from academia and industry.

Actinium's pipeline also includes a potentially best-in-class CD33 program with its ARC comprised of the anti-CD33 antibody lintuzumab labeled with the alpha-particle emitter actinium-225. Its CD33 program is currently being studied in multiple Phase 1 clinical trials for targeting conditioning, in combinations and as a therapeutic in multiple diseases and indications including AML, MDS and MM. Notable trials include the planned pivotal program for Actimab-MDS for targeted conditioning prior to a BMT for patients with high-risk MDS, that is expected to initiate in 2019, and two Actimab-A venetoclax combination trials including the initiated Phase 1 doublet trial and the planned triplet trial with a hypomethylating agent.

Actinium is also developing its proprietary AWE or Antibody Warhead Enabling technology platform which utilizes radioisotopes including iodine-131 and the highly differentiated actinium-225 coupled with antibodies to target a variety of antigens that are expressed in hematological and solid tumor cancers. The AWE technology enables Actinium's internal pipeline and with the radioisotope Actinium-225 is being utilized in a collaborative research partnership with Astellas Pharma, Inc. Actinium's clinical programs and AWE technology platform are covered by a portfolio of over 110 patents covering composition of matter, formulations, methods of use and also methods of manufacturing the radioisotope Actinium-225 in a cyclotron.

More information is available at www.actiniumpharma.com and our Twitter feed @ActiniumPharma, www.twitter.com/actiniumpharma.

Forward-Looking Statements for Actinium Pharmaceuticals, Inc.

This press release contains "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 performance of Actinium which Actinium 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 Food and Drug Administration 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, including without limitation its annual report on Form 10-K for the period ended December 31, 2018, subsequent quarterly reports on Form 10-Q

and current reports on Form 8-K, each as amended and supplemented from time to time.

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