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

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

NEW YORK, Jan. 17, 2019 /PRNewswire/ --**Actinium Pharmaceuticals, Inc.** (NYSE AMERICAN: ATNM) announced today that it has successfully completed the first module of its previously announced research and option agreement with Astellas Pharma Inc. Within the collaboration, the Company is using its Actinium Warhead Enabling (AWE) Platform to conjugate and label select Astellas targeting agents with the potent actinium-225 (Ac-225) payload.

"This collaboration represents Actinium and Astellas' shared commitment to employ cutting-edge technology in the research of new drug candidates for patients. Therefore, we are delighted that Astellas has opted to progress our ground-breaking collaborative research activities to the next stage of research," said Dr. Dale Ludwig, Actinium's Chief Scientific Officer. "I am very pleased with the results we have generated in our efforts with Astellas to date, which I believe showcase the capabilities of our AWE Platform Technology. My team and I are excited to execute the next module of the collaboration and are optimistic that we will continue to move the program forward."

Since launching its AWE Program in November 2017, Actinium has achieved a number of milestones including:

- Appointed Dr. Dale Ludwig, a leading antibody therapeutics and antibody conjugate expert, as Chief Scientific Officer
- Presented positive data at ASH 2017 demonstrating the superior *in vitro* cell killing properties of Ac-225 labeled daratumumab or Darzalex™, Johnson & Johnson's blockbuster CD38 targeting therapy for multiple myeloma
- Presented additional positive data from *in vivo* animal studies at AACR 2018 demonstrating enhanced tumor control and survival with Ac-225 labeled daratumumab
- Signed collaborative research and option agreement with Astellas

Actinium's Chairman and Chief Executive Officer Sandesh Seth added, "Actinium's AWE

technology platform encompasses not only our Ac-225 payload but also our intellectual property, know-how, clinical experience, and exoskeleton of a commercial supply chain that uniquely positions us in the industry. The strong execution of this collaboration thus far showcases Actinium's expanded R&D capabilities that give us great excitement for what we can accomplish in the future with our team and technology. Combined with the continued clinical progress across our pipeline, particularly our pivotal Phase 3 trial for Iomab-B and expansion of our CD33 program into targeted conditioning and new disease indications, we are motivated to capitalize on the significant opportunities that lie ahead of us."

About 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 (Ac-225) Radio-Conjugates (ARCs) wherein a biomolecular targeting agent is stably labeled with the powerful Ac-225 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 Ac-225, including newer next-generation methodologies for chelation of Ac-225.

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 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 bone marrow transplant (BMT) 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 ARCs or Antibody Radio-Conjugates that combine the targeting ability of monoclonal antibodies with the cell killing ability of radioisotopes. Actinium's pipeline of clinical-stage targeted conditioning ARCs target the antigens CD45 and CD33 for patients with a broad range of hematologic malignancies including acute myeloid leukemia (AML), myelodysplastic syndrome (MDS) and multiple myeloma (MM).

Iomab-B, Actinium's lead targeted conditioning product candidate, is currently enrolling patients in the pivotal Phase 3 SIERRA trial in patients age 55 or older, with active, relapsed or refractory AML. Iodine-131 apamistamab (Iomab-B), 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 500 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, chemo-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 can 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 or planned to be 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.

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 75 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 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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