March 11, 2021

Actinium to Highlight Expansion of Targeted Conditioning Portfolio at AACR with Next-Generation Actinium-225-Based CD45 Targeting ARC

- Positive preclinical data support continued development with strong potential in bone marrow transplant, adoptive cell therapy and gene therapy applications

- Potent alpha emitter Actinium-225 targeted to CD45 cells demonstrates positive biodistribution profile and dose-dependent conditioning capabilities

NEW YORK, March 11, 2021 /PRNewswire/ --**Actinium Pharmaceuticals, Inc.** (NYSE AMERICAN: ATNM) ("Actinium" or the "Company") today announced that preclinical feasibility data supporting an Actinium-225-based CD45-targeted Next-Generation conditioning agent has been accepted for poster presentation at the American Association of Cancer Research (AACR 2021) annual meeting being held virtually April 10th – 15th, 2021. The data to be presented includes initial dose escalation, safety, tolerability, and conditioning experiments of an Ac-225-based CD45 ARC or antibody radiation conjugate. Dosimetry results with this Ac-225-based alpha emitting ARC showed selective accumulation in immune cell target organs such as bone marrow, spleen, and liver with the potential for lower exposure to non-target tissues from longer path length beta emitter radioisotopes like Iodine-131 and Lutetium-177. The data to be presented demonstrate that conditioning with this Ac-225-based CD45-targeting agent result in depletion of peripheral immune cells and hematopoietic progenitor cells, thereby enabling engraftment of donor cells. A dose dependent response was observed with low doses depleting white blood without effecting hematopoietic progenitor cells, representing a lymphodepletive dose that is relevant for adoptive cell therapies such as CAR-T, while higher doses eliminated peripheral immune cells and hematopoietic progenitor cells, which is applicable to ex vivo gene therapies and BMT or bone marrow transplant.

This program further augments Actinium's targeted conditioning portfolio that is led by

Iomab-B, an ARC consisting or the radioisotope Iodine-131 and the CD45 targeting antibody apamistamab. In total, apamistamab has been studied in several hundred patients. Iomab-B is currently being studied in the pivotal Phase 3 SIERRA trial for BMT conditioning in patients with active relapsed or refractory acute myeloid leukemia age 55 and above that is expected to complete enrollment in 2021.

Details of the poster presentation at AACR are as follows:

Title:	Dose optimization and radiation dosimetry of CD45-targeting 225Actinium-armed antibody as a conditioning agent for adoptive cell therapy
Session Type:	E-Poster Session
Session Category:	Immunology
Session Title:	Adoptive Cell Therapy
Poster Release:	8:30 a.m. ET on Saturday, April 10

Dr. Dale Ludwig, Actinium's Chief Scientific and Technology Officer said, "We are excited to present this data supporting an Ac-225 antibody radiation-conjugate at AACR and to have the opportunity to develop potentially safer and better targeted chemotherapy-free conditioning agents. Recent cases of secondary malignancies potentially tied to toxic chemotherapy regimens highlight the urgent need for improved conditioning to enable the very promising cell and gene therapy strategies to treat diseases such as Sickle Cell Disease and Beta-Thalassemia. As advances in cell and gene therapies address more disease indications and thus a larger overall patient population, our commitment to developing targeted conditioning agents to improve patient access to the these potentially curative therapies and patient outcomes grows stronger. We look forward to further optimizing this construct to enable advancement into the clinic."

Actinium is developing the only multi-target, multi-indication, clinical-stage pipeline for targeted conditioning and the only ARC based targeted conditioning regimens in development. This Ac-225-CD45 construct to be highlighted at AACR resulted from Actinium's AWE or Antibody Warhead Enabling technology platform. AWE encompasses Actinium's intellectual property of over 140 patents, know-how, and clinical experience including nearly 150 patients treated with alpha emitters like Ac-225 for which Actinium is an industry leader. Specific to Ac-225, Actinium has gold-standard linker technology with a strong stability and safety profile and patents covering composition of matter, formulations, methods of use and methods of manufacturing the radioisotope Actinium-225 in a cyclotron. In addition to fueling Actinium's R&D efforts, AWE is being utilized in collaborative research partnership with Astellas Pharma, Inc. who is focused on the development of theranostics for solid tumors.

Sandesh Seth, Actinium's CEO, said "This new program and initial data is yet another example of the potential of Actinium's AWE platform technology and our team's ability to create disruptive agents for oncology therapeutics and cell and gene-based therapies. It also exemplifies Actinium's strong commitment to advancing and increasing access to life-changing and potentially curative therapies. With 2021 expected to be a transformational year for Actinium marked with key clinical milestones including completion of the SIERRA trial it is also exciting to see our R&D efforts delivering tangible results that will position us

for continued future success."

About Actinium Pharmaceuticals, Inc. (NYSE: ATNM)

Actinium Pharmaceuticals, Inc. is a clinical-stage biopharmaceutical company developing ARCs or Antibody Radiation-Conjugates, which combine the targeting ability of antibodies with the cell killing ability of radiation. Actinium's lead application for our ARCs is targeted conditioning, which is intended to selectively deplete a patient's disease or cancer cells and certain immune cells prior to a BMT or Bone Marrow Transplant, Gene Therapy or Adoptive Cell Therapy (ACT) such as CAR-T to enable engraftment of these transplanted cells with minimal toxicities. With our ARC approach, we seek to improve patient outcomes and access to these potentially curative treatments by eliminating or reducing the non-targeted chemotherapy that is used for conditioning in standard practice currently. Our lead product candidate, I-131 apamistamab (Iomab-B) is being studied in the ongoing pivotal Phase 3 Study of Iomab-B in Elderly Relapsed or Refractory Acute Myeloid Leukemia (SIERRA) trial for BMT conditioning. The SIERRA trial is over seventy-five percent enrolled and positive single-agent, feasibility and safety data has been highlighted at ASH, TCT, ASCO and SOHO annual meetings. More information on this Phase 3 clinical trial can be found at sierratrial.com. I-131 apamistamab will also be studied as a targeted conditioning agent in a Phase 1 study with a CD19 CAR T-cell Therapy with Memorial Sloan Kettering Cancer Center and Phase 1/2 anti-HIV stem cell gene therapy with UC Davis. In addition, we are developing a multi-disease, multi-target pipeline of clinical-stage ARCs targeting the antigens CD45 and CD33 for targeted conditioning and as a therapeutic either in combination with other therapeutic modalities or as a single agent for patients with a broad range of hematologic malignancies including acute myeloid leukemia, myelodysplastic syndrome and multiple myeloma. Ongoing combination trials include our CD33 alpha ARC, Actimab-A, in combination with the salvage chemotherapy CLAG-M and the Bcl-2 targeted therapy venetoclax. Underpinning our clinical programs is our proprietary AWE (Antibody Warhead Enabling) technology platform. This is where our intellectual property portfolio of over 100 patents, know-how, collective research and expertise in the field are being leveraged to construct and study novel ARCs and ARC combinations to bolster our pipeline for strategic purposes. Our AWE technology platform is currently being utilized in a collaborative research partnership with Astellas Pharma, Inc.
Website: https://www.actiniumpharma.com/

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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