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Actinium Highlights Foundational Patents Covering the Composition of Apamistamab Antibody and Iomab-B Antibody Radiation Conjugate for Targeted Conditioning Until 2037 and Recent EU Patent Activity

- Apamistamab CD45 antibody is the basis for lead Phase 3 candidate Iomab-B for targeting conditioning prior to bone marrow transplant and next generation Iomab-ACT targeted conditioning program for CAR-T and Gene Therapies

NEW YORK, Nov. 23, 2020 /PRNewswire/ --**Actinium Pharmaceuticals, Inc.** (NYSE AMERICAN: ATNM) ("Actinium" or the "Company") today highlighted its intellectual property portfolio for apamistamab, a CD45 targeting antibody, and the Antibody Radiation Conjugate (ARC) comprised of apamistamab and the radioisotope iodine-131 used in the Company's lead Phase 3 candidate, Iomab-B, and its Iomab-ACT programs. Actinium owns issued or pending patents within the United States and globally covering composition of matter, formulation, methods of use, and methods of administration with potential coverage for 19 years or longer. Importantly, Actinium owns an issued patent in the US covering composition of matter, for which the Company expects validity until 2037. In addition, the Company owns a second issued US patent that further covers composition of matter, methods of use, and methods of administration for Iomab-B. The company has also received a notice of allowance in Europe for this second patent and expects it to be in force until 2036.

Iomab-B is currently being investigated in the ongoing pivotal Phase 3 SIERRA trial, which is over 75% enrolled, for targeted conditioning prior to potentially curative bone marrow transplant (BMT) for patients with relapsed or refractory Acute Myeloid Leukemia ("R/R AML"). In addition, Actinium is utilizing apamistamab with lower doses of iodine-131, known as Iomab-ACT, for targeted conditioning prior to gene therapy and adoptive cell therapy

("ACT"), namely CAR-T, including in its recently announced collaboration with Memorial Sloan Kettering Cancer Center that is supported by NIH STTR Fast Track grant funding.

"The continued protection of our lead asset Iomab-B, our Iomab-ACT program and apamistamab by a strong patent position is an important component of our development efforts, particularly as we approach the conclusion of our pivotal Phase 3 SIERRA trial for BMT conditioning in R/R AML The growth of BMT, ACT and Gene Therapy has highlighted the importance of conditioning and the need to move beyond non-targeted chemotherapy to increase the number of patients that could benefit from these potentially curative therapies. CD45 is an ideal target for conditioning applications given its unique expression on blood cancer cells and blood forming stem and immune cells and with no expression outside the hematopoietic or blood system," said Dr. Dale Ludwig, Actinium's Chief Scientific Officer. "Apamistamab is well characterized and its use in conditioning is supported by extensive clinical data across multiple clinical trials and indications. Our robust data shows that apamistamab has a favorable biodistribution profile that, together with our ARC technology, has significant advantages over other approaches such antibody drug conjugates that require payload internalization, making them impractical for targeting CD45. Further, our ARC approach allows us to use varying intensities of targeted radiation to achieve our desired conditioning outcome. With these important patents in place, and continued expansion of our patent portfolio in the US, EU and other select countries, we look forward to continuing to build out our targeted conditioning strategic business unit."

About Iomab-B

Iomab-B is Actinium's lead product candidate that is currently being studied in a 150-patient, multicenter pivotal Phase 3 clinical trial in patients with relapsed or refractory acute myeloid leukemia who are age 55 and above. Upon approval, Iomab-B is intended to prepare and condition patients for a bone marrow transplant, also referred to as a hematopoietic stem cell transplant, which is often considered the only potential cure for patients with certain blood-borne cancers and blood disorders. Iomab-B targets cells that express CD45, a pan-leukocytic antigen widely expressed on white blood cells with the monoclonal antibody, apamistamab (formerly BC8), labeled with the radioisotope, iodine-131. By carrying iodine-131 directly to the bone marrow in a targeted manner, Actinium believes Iomab-B will avoid the side effects of radiation on most healthy tissues while effectively killing the patient's cancer and marrow cells. In a Phase 1/2 clinical study in 68 patients with advanced AML or high-risk myelodysplastic syndrome (MDS) age 50 and older, Iomab-B produced enabled 100% of patients to proceed to transplant with all patients achieving transplant engraftment by day 28. Iomab-B was developed at the Fred Hutchinson Cancer Research Center where it has been studied in almost 300 patients in a number of blood cancer indications, including acute myeloid leukemia, chronic myeloid leukemia, acute lymphoblastic leukemia, chronic lymphocytic leukemia, Hodgkin's disease, Non-Hodgkin lymphomas and multiple myeloma. Actinium obtained the worldwide, exclusive rights to apamistamab (BC8) and Iomab-B from the Fred Hutchinson Cancer Research Center. Iomab-B has been granted Orphan Drug Designation for relapsed or refractory AML in patients 55 and above by the U.S. Food and Drug Administration and the European Medicines Agency.

About Actinium Pharmaceuticals, Inc.

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 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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