November 12, 2021

Actinium Highlights Actimab-A Combined with CD47 Immunotherapy Results in Upregulation of Calreticulin Leading to Enhanced Phagocytosis in AML at the Society for Immunotherapy for Cancer (SITC) Conference

- Mechanistic synergy via increased cell surface calreticulin expression to turn on "eat me" signal in cancer cells with targeted radiation resulting in enhanced phagocytosis in AML that is also observed in solid tumors

- Combination supports Actinium's strategy focused on establishing Actimab-A as a backbone therapy in AML and other CD33+ blood cancers

NEW YORK, Nov. 12, 2021 /PRNewswire/ --**Actinium Pharmaceuticals, Inc.** (NYSE AMERICAN: ATNM) ("Actinium" or the "Company"), a leader in the development of targeted radiotherapies for patients with unmet needs, today announced that data highlighting Actimab-A in combination with a CD47 blocking antibody immunotherapy are being presented at the 36th Annual Meeting of the Society for Immunotherapy for Cancer (SITC 2021) November 12th – 14th. The poster presentation highlights that in multiple AML cell lines, Actimab-A induced an increase in cell surface calreticulin as much as 3-times higher than control. When combined with a CD47 blocking antibody, enhanced pro-phagocytic immune response was seen in vitro across 3 AML cell lines. In vivo studies in disseminated AML tumor models showed a significant increase in survival with the Actimab-A plus CD47 immunotherapy combination compared to single agent therapy.

Actinium Pharmaceuticals, Inc.

Actimab-A is an antibody radiation conjugate (ARC) comprised of a CD33 targeting antibody armed with the alpha-emitting radioisotope Actinium-225, which has shown single agent anti-leukemic activity in a Phase 2 trial as well as synergy in combination with chemotherapy and

targeted agents in Phase 1 trials. It has been shown that upregulation of CD47, which acts as a "don't eat me" signal, is one mechanism in which AML cells can evade targeting and destruction by an innate immune response. The data presented at SITC shows for the first time the potential to upregulate calreticulin, a pro-phagocytic "eat me" signal, with a CD33 ARC armed with the Actinium-225 radioisotope payload resulting in a potential synergistic effect with CD47 immunotherapy.

Dr. Avinash Desai, Actinium's Chief Medical Officer, said, "As CD47 emerged as a highly attractive novel immunotherapy target, we rapidly identified the potential to combine Actimab-A with a CD47 blocking antibody. Based on the data to date with CD47 in patients with AML and MDS, we believe the potential exists to improve patient outcomes by combining with Actimab-A. Actimab-A is a highly differentiated agent for the treatment of AML as it uses radiation as the cytotoxic payload. AML, and many other blood cancers, are highly sensitive to radiation but cannot be properly targeted with standard external radiation sources due to their diffuse nature. With the increasing recognition of radiation's potential to activate immune responses, we believe we are best poised to lead the field with our ARCs that can deliver and target the radiation with cellular precision and minimize systemic exposure and toxicities. By targeting CD33, we are targeting a validated marker that is expressed in a majority of AML patients with a radioisotope payload that is agnostic to cytogenetic or molecular markers. With initial mechanistic synergy demonstrated with CD47 immunotherapy, we look forward to exploring collaborations to advance this novel and differentiated combination from preclinical studies into patients in the clinic to further bolster Actimab-A's potential as a backbone therapy for the treatment of AML."

SITC Poster Details

Poster Title: Anti-CD33 actinium-225 targeted radioimmunotherapy enhances the biologic activity of anti-CD47 antibody immunotherapy in preclinical models of acute myeloid leukemia

Poster Number: 590

Location: Poster Hall, Walter E. Washington Convention Center in Washington, D.C.

Dates and Times: 11/12/2021 - 11/14/2021, 7:00 am - 5:00 pm

The poster will be accessible on Actinium's website on the Presentations & Webinars page: https://ir.actiniumpharma.com/presentations-webinars

About Actinium Pharmaceuticals, Inc.
Actinium Pharmaceuticals, Inc. is a clinical-stage biopharmaceutical company developing targeted radiotherapies to deliver cancer-killing radiation with cellular level precision to treat patients with high unmet needs not addressed by traditional cancer therapies. Actinium's current clinical pipeline is led by ARCs or Antibody Radiation-Conjugates that are being applied to 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. Actinium's targeted conditioning ARCs 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) has been studied in several hundred patients including in the recently completed, 150-patient, pivotal Phase 3 Study of Iomab-B in Elderly Relapsed or Refractory Acute Myeloid Leukemia (SIERRA) trial for BMT conditioning. Iomab-ACT, low dose I-131 apamistamab is being studied as a targeted conditioning agent in a Phase 1 study with a CD19 CAR T-cell Therapy with Memorial Sloan Kettering Cancer Center. In addition, we are leaders in the field of Actinium-225 alpha therapies. Actimab-A, our clinical stage CD33 targeting ARC alpha therapy has been studied in nearly 150 patients including our ongoing combination trials 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 160 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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