April 11, 2022

Actinium Pharmaceuticals Highlights Potent Anti-Tumor Activity of a HER3 Targeted Radiotherapy at AACR

- Data show enhanced antitumor effects and improved survival were observed in a preclinical NSCLC model compared to a naked HER3 antibody

- HER3 targeted radiotherapy represents a novel therapeutic strategy for tumors expressing HER3 and tumors with acquired resistance to HER1/2 therapies.

- Data Supports Actinium Pharmaceutical's research collaboration with AVEO Oncology to develop and advance a HER3 targeted radiotherapy to clinical studies

NEW YORK, April 11, 2022 /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 positive results from preclinical studies evaluating an anti-HER3 antibody, conjugated with an Actinium-225 (Ac-225) radioisotope payload, for targeting HER3-positive non-small cell lung cancer (NSCLC) cells. These data were presented at the American Association of Cancer Research (AACR 2022) annual meeting, which is being held April 8th – 13th at the Ernest N. Morial Convention Center in New Orleans, Louisiana.

AACR Poster Highlights:

- Ac-225-HER3 antibody radio conjugate (ARC) eliminated HER3-postive tumors in an in vivo animal model of human non-small cell lung cancer (NSCLC) at multiple dose levels with increased survival
- A dose-dependent cytotoxic effect against HER3 expressing cells was observed in vitro with the Ac-225-HER3-ARC
- Biodistribution data demonstrates accumulation of the Ac-225-HER3-ARC in HER3 expressing tumors in the in vivo model of NSCLC
- Conjugation of Ac-225 to the HER3 antibody did not affect the antibody's targeting properties as determined by binding to HER3 expressing cells

Dr. Helen Kotanides, Vice President, Translational Research and Preclinical Development, stated, "HER3 is a well-validated target that is overexpressed in a number of cancers and

associated with poor survival in breast, ovarian, lung, gastric and prostate cancer. It is also upregulated in response to HER1 and HER2 targeted therapies as part of acquired resistance against these EGFR therapies. These data show that arming a HER3-targeting agent with Actinium-225 results in potent anti-tumor agent, which improved survival in our NSCLC models. These data support our goal of developing a HER3 targeted radiotherapy for use in a patient population in need of new treatments and give us great excitement for our ongoing collaboration with AVEO centered around HER3."

Sandesh Seth, Chairman and CEO of Actinium, stated, "We are excited to continue to demonstrate Actinium's enhanced R&D capabilities and commitment to developing potent radiotherapies targeting solid tumors. We look forward to sharing these data, which show the efficacy for our novel approach of conjugating Actinium-225 to a HER3 antibody at AACR 2022. The development of Ac-225-HER3-ARC, a product of our validated Antibody Warhead Enabling (AWE) technology platform, represents a departure from conventional HER3-targeting approaches, such as naked antibodies and antibody drug conjugates, that are currently being explored for this tumor antigen. These exciting data highlight Actinium's leadership in developing novel targeted radiotherapy approaches for treating cancers having high unmet needs."

The full poster is available as an e-poster on the AACR 2022 platform and will be presented in-person at the conference with details below:

AACR Poster Details

Title: Targeting HER3 receptor positive cancers with a novel anti-HER3 antibody radioconjugate (ARC)
Session Category: Experimental and Molecular Therapeutics
Session Title: Preclinical Radiotherapeutics
Session Date and Time: Tuesday, April 12, 2022, 1:30 PM – 5:00 PM
Location: New Orleans Convention Center, Exhibit Halls D-H, Poster Section 25
Poster Board Number: 4
Permanent Abstract Number: 3306

The poster will be accessible via Actinium's websitehere.

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, Iomab-B (I-131 apamistamab) has been studied in several hundred patients including in the 150-patient, pivotal Phase 3 Study of Iomab-B in Elderly Relapsed or Refractory Acute Myeloid Leukemia (SIERRA) trial for BMT

conditioning, which completed patient enrollment in the third quarter of 2021. 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 170 patents, know-how, collective research and expertise in the field are being leveraged to construct and study novel ARCs and ARC combinations such as with CD47 immunotherapies to bolster our pipeline for strategic purposes. Our AWE technology platform is currently being utilized in a collaborative research partnership with Astellas Pharma, Inc., AVEO Oncology and EpicentRx. 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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