November 6, 2019

Actinium Pharmaceuticals to Present New Clinical Findings from SIERRA Trial Supporting the Iomab-ACT Program for Targeted Lymphodepletion for CAR-T and Adoptive Cell Therapies at ASH 2019

- 85% median reduction in lymphocytes observed after low-dose Iomab-B dosimetry administration

- 35% median reduction in peripheral leukemic blasts achieved with Iomab-B dosimetry dose that is 7 times lower than proposed Iomab-ACT dose

NEW YORK, Nov. 6, 2019 /PRNewswire/ --**Actinium Pharmaceuticals, Inc.** (NYSE AMERICAN: ATNM) ("Actinium") today announced that new findings from its pivotal Phase 3 SIERRA trial for Iomab-B (Iodine-131 apamistamab) that support its Iomab-ACT program for lymphodepletion for CAR-T and adoptive cell therapies has been accepted for presentation at the 2019 American Society of Hematology (ASH) annual meeting that is being held December 7-10, 2019 in Orlando, FL. Lymphodepletion is a necessary step that creates space for the CAR-T cells to be infused and promotes expansion of cells in vivo by creating a favorable homeostatic cytokine environment. Actinium is advancing the development of low dose Iomab-B (Iodine-131 apamistamab), a CD45 targeting antibody radiation-conjugate (ARC), as an alternative to today's standard practice of chemotherapy-based lymphodepletion regimens like fludarabine/cyclophosphamide (Flu/Cy), which have been implicated in CAR-T toxicities including cytokine release syndrome (CRS) and neurotoxicity.

Title: Sierra Clinical Trial Dosimetry Results Support Low Dose Anti-CD45 Iodine (131I) Apamistamab [Iomab-B] for Targeted Lymphodepletion Prior to Adoptive Cell Therapy

An analysis was performed on blood samples from 57 patients enrolled in the ongoing

pivotal Phase 3 SIERRA trial for Iomab-B to demonstrate the effectiveness of low dose Iomab-B as a modality for targeted transient lymphodepletion. On the SIERRA trial, patients receive a low dosimetry dose of Iomab-B (median dose of 10 mCi with a range of 7-20 mCi) in an outpatient setting per study protocol. The analysis presented in the poster evaluated blood samples at various time points including pre-dosimetric infusion, post-dosimetric infusion, day 1 post-dosimetric infusion, and pre-therapeutic infusion (range 6-14 days post-dosimetry) to assess the impact of low dose Iomab-B on immune cell lymphodepletion and its anti-tumor effect on circulating blasts, as well as to determine its clearance profile from circulation.

Key Highlights:

- A significant but transient reduction in lymphocytes and white blood cells was observed compared to pre-dosimetry infusion levels
- 85% reduction in lymphocytes was observed at the post-dosimetry infusion time point, a 67% decrease at day 1 post-dosimetric infusion, and a 43% decrease one week later just prior to the Iomab-B therapeutic infusion
- 35% reduction in peripheral leukemic blasts was observed at the post-dosimetry infusion time point, suggesting a rapid anti-leukemic effect with single-agent Iomab-B consistent with findings from SIERRA presented at ASCO 2019
- The levels of platelets, red blood cells, and neutrophils were unchanged between pre-infusion and post-dosimetry infusion, potentially reflecting the comparatively lower surface antigen levels of CD45 on these cell types
- Based on an analysis of 25 treated patients, a non-myeloablative dose of 75 mCi has been proposed as a starting dose for human clinical testing
- Analysis of the proposed 75 mCi dose of Iomab-B would be sufficiently cleared in 136 hours (5.7 days) to allow for CAR-T administration

Poster Details:

Publication Number: 1958
Session Name: 704. Immunotherapies: Poster I
Date: Saturday, December 7, 2019
Presentation Time: 5:30 PM - 7:30 PM
Location: Orange County Convention Center, Hall B

Dale Ludwig, Ph.D., Actinium's Chief Scientific Officer, said, "These promising findings from the analysis of clinical data from the SIERRA trial confirm our excitement and support the potential of our Iomab-ACT program as a chemotherapy-free alternative for lymphodepletion. While significant efforts have gone towards innovating CAR-T and cellular therapies, there has been little innovation in the lymphodepletion regimens that they rely on. These results show that the multi-modal mechanism of our CD45 targeting ARC can selectively deplete immune cells and exert an anti-leukemic effect while sparing red blood cells and platelets through a single-dose outpatient administration. It is exciting to see human clinical data produce these promising results and demonstrate that our Iomab-ACT program will fit well within the vein-to-vein time of CAR-T. We look forward to beginning a first-in-man clinical trial that will explore our Iomab-ACT program in conjunction with a CAR-T therapy and we have great confidence in continued positive results."

About the Iomab-ACT program

Iomab-ACT is a lower dose of Actinium's lead program Iomab-B, which has been studied in over 300 patients and is currently being investigated in a pivotal Phase 3 trial for targeted conditioning prior to a Bone Marrow Transplant (BMT). Iomab-ACT targets CD45, an antigen expressed on many of the cells that are relevant to CAR-T including lymphocytes, macrophages and regulatory T-cells and that have been associated with CAR-T challenges such as durability of response, cytokine release syndrome (CRS) and neurotoxicity. Actinium has generated preclinical data that targeted lymphodepletion via Iomab-ACT has the potential to improve tumor control, selectively deplete necessary cells and be highly differentiated in terms of tolerability compared to chemotherapy-based lymphodepletion regimens, namely fludarabine/cyclophosphamide (Flu/Cy). The Iomab-ACT program may enable lymphodepletion through a single-dose outpatient administration versus Flu/Cy or other chemo-based lymphodepletion regimens that require multiple infusions in an inpatient setting over several days.

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 kill patient's cancer cells and certain immune cells prior to a BMT or Bone Marrow Transplant, CAR-T and other cell therapies. 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, 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. Beyond Iomab-B, 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 AML (Acute Myeloid Leukemia), MDS (Myelodysplastic Syndrome), MM (Multiple Myeloma). 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.

Forward-Looking Statements for Actinium Pharmaceuticals, Inc.

The information in this press release contains forward-looking statements regarding future events, including statements about Actinium's expectations regarding the terms of the offering or completion of the offering. Actinium intends such forward-looking statements to be covered by the safe harbor provisions contained in Section 27A of the Securities Act of 1933, as amended, and Section 21E of the Securities Exchange Act of 1934, as amended. Actual results or developments may differ materially from those projected or implied in these forward-looking statements. Factors that may cause such a difference include, without limitation, risks and uncertainties related to market and other conditions, the satisfaction of customary closing conditions related to the offering and the impact of general economic, industry or political conditions in the United States or internationally. There can be no

assurance that Actinium will be able to complete the offering on the anticipated terms, or at all. More information about the risks and uncertainties faced by Actinium are more fully detailed under the heading "Risk Factors" in Actinium's Annual Report on Form 10-K for the year ended December 31, 2018 filed with the SEC. You should not place undue reliance on these forward-looking statements, which apply only as of the date of this press release. Except as required by law, Actinium assumes no obligation to update publicly any forward-looking statements, whether as a result of new information, future events or otherwise.

Contacts:

Actinium Pharmaceuticals, Inc.
Steve O'Loughlin
Principal Financial Officer
investorrelations@actiniumpharma.com

Hans Vitzthum
LifeSci Advisors, LLC
Hans@LifeSciAdvisors.com
(617) 535-7743

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