October 28, 2020

Actinium Pharmaceuticals, Inc. Provides Corporate Update and Year-End 2020 Outlook

- Multiple milestones expected in the Fourth Quarter from the Company's ARC pipeline including Phase 3 data from the pivotal SIERRA trial for Iomab-B and Actimab-A combination trials with CLAG-M and venetoclax

- Ad hoc interim analysis from SIERRA to be completed by year end

NEW YORK, Oct. 28, 2020 /PRNewswire/ --**Actinium Pharmaceuticals, Inc.** (NYSE AMERICAN: ATNM) ("Actinium" or the "Company") today provided a corporate update covering the progress made in 2020 thus far as well as major milestones expected by year-end and in 2021.

Sandesh Seth, Actinium's Chairman and Chief Executive Officer, said, "We have made material advances in our key clinical trials and programs for targeted conditioning and therapeutic combinations this year and anticipate several important milestones before year-end and in 2021. Collectively, as described in our recent shareholder letter, upcoming data events with our Iomab-B SIERRA trial and Actimab-A combination trials will bring into view the opportunity for a much larger and attractive opportunity in R/R AML than either drug candidate alone. Iomab-B, which is in the final quarter of enrollment of the Phase 3 SIERRA trial for targeted conditioning of older patients with R/R AML, has the potential to make potentially curative BMT accessible for patients not able to receive BMT with today's conditioning approaches. Our CD33 program is focused on enhancing patient outcomes by leveraging the potentiating or mechanistic synergy of targeted radiation via our Antibody Radiation Conjugates (ARCs) with other therapeutic modalities.

"We have also made great strides with our Iomab-ACT program for targeted conditioning for the large and growing fields of cell and gene therapies with our recent collaboration with Memorial Sloan Kettering and their CD19 CAR-T therapy that has been awarded an NIH STTR Fast-Track Phase 1/2 grant. Armed with a highly differentiated technology, a strong balance sheet, enhanced R&D capabilities through our recently acquired research facility and motivated team, we are excited to execute on our vision and for the multiple upcoming

clinical milestones that have the potential to transform Actinium."

Key ARC Program Highlights and Outlook:

Iomab-B SIERRA Pivotal Trial

- The SIERRA trial reached seventy-five percent enrollment.
- In the second quarter, the Company exercised a single ad hoc interim analysis, which was guided by the positive interim results from the first fifty percent of patients enrolled on the pivotal Phase 3 SIERRA trial for Iomab-B that were presented in February 2020 at the Transplant & Cellular Therapy Conference (TCT).
    - Additionally, the difference in number of patients potentially evaluable for the primary endpoint, measured by 100-day non-relapse transplant related mortality, has remained consistent at roughly 6x greater for the study arm at the 25% and 50% enrollment updates.
- The Company will report safety and feasibility data from 75% enrollment in the Fourth Quarter. Additionally, the ad hoc interim analysis to be completed in the Fourth Quarter could result in a recommendation for early termination of the trial for futility of one of the arms, or a continuation of the trial.

Actimab-A and CLAG-M Phase 1 Combination Trial

- Successfully completed third and final dose cohort of 0.75 uCi/Kg of Actimab-A marking the completion of the planned Phase 1 trial.
- The Company has reported that the second dose cohort demonstrated an 86% complete remission rate in relapsed or refractory AML patients treated with Actimab-A plus CLAG-M, which is a 60% improvement over what is seen with CLAG-M alone. Further, the minimal residual disease or MRD negative rate was 71%, which is an indicator of deep remissions.
- The Company expects to present results from the third dosing cohort in the Phase 1 trial in the fourth quarter of 2020.

Actimab-A and Venetoclax Phase 1/2 Combination Trial

- Successfully completed first dosing cohort thus allowing the study to proceed to a second dose cohort of 1.0 uCi/Kg Actimab-A and venetoclax combination.
- First in human data expected in 2020; the Company expects to report study proof of concept results in 2021.

Iomab-ACT CAR-T Program

- Actinium was awarded a Fast-Track Phase 1/2 STTR grant by the National Institutes of Health (NIH) for a clinical collaboration of Iomab-ACT targeted conditioning with Memorial Sloan Kettering Cancer Center's (MSK) CD19 CAR T-Cell therapy, 19-28z.
- Results published in the New England Journal of Medicine showed an 83% remission rate with MSK's 19-28z CAR-T utilizing chemotherapy-based conditioning. However, cytokine release syndrome and neurotoxicity were cited as a challenge for further development in the study which included patients with relapsed or refractory B-cell acute lymphoblastic leukemia.
- Preclinical data supporting Iomab-ACT's application in targeted lymphodepletion prior

to ACT such as CAR-T was published in the journal *Oncotarget*. These results support the application of CD45-targeted radioimmunotherapy lymphodepletion with a non-myeloablative dose of Iomab-ACT prior to adoptive cell therapy.
- The Company expects Phase 1 proof of concept data from collaboration in 2021.

Research Facility and Expanded R&D Capabilities

- Launched R&D Lab with a focus on applying its Antibody Warhead Enabling (AWE) technology platform and scientific expertise in radioimmunobiology to the development of ARCs. The Company intends to leverage the new facility to better evaluate new assets for in-licensing, broaden potential uses of its clinical stage candidates and to secure collaborations and partnerships with biopharmaceutical companies.

Financial Condition

Actinium reported a cash balance of $48.2 million as of September 30, 2020 compared with $9.2 million as of December 31, 2019 and a net loss of $5.5 million for 3Q:2020. Based on current estimates, the current cash balance is expected to fund operations through clinical milestones including completion of the Pivotal Phase 3 SIERRA trial, completion of ongoing Phase 1/2 Actimab-A combination trials and planned R&D activity.

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. 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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