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Actinium Highlights Survival Data in Relapsed/Refractory AML Patients with Prior Venetoclax Treatment and/or with a TP53 Mutation from the Actimab-A CLAG-M Combination Trial Oral Presentation at ASH

- 59% 1-year overall survival and 32% 2-year overall survival in patients with prior Venetoclax treatment

- 52% 1-year overall survival and 19% 2-year overall survival in patients with a TP53 mutation

- 75% measurable residual disease negativity achieved in heavily pretreated, high-risk relapsed or refractory patients

- Actimab-A + CLAG-M was well tolerated with a manageable safety profile

NEW YORK, Dec. 12, 2022 /PRNewswire/ -- **Actinium Pharmaceuticals, Inc.** (NYSE AMERICAN: ATNM) (Actinium or the Company) a leader in the development of targeted radiotherapies, today highlighted high rates of Complete Remission (CR/CRi) and rates of measurable residual disease (MRD) negativity with improved overall survival in its Actimab-A CLAG-M combination trial in high-risk patients with relapsed or refractory (r/r) acute myeloid leukemia (AML). These data were detailed in an oral presentation at the 64th Annual ASH Meeting & Symposium being held December 10-13, 2022 in New Orleans, Louisiana. The trial enrolled patients with intermediate and adverse cytogenetics including over 50% with a TP53 mutation and significant prior treatment with a median of 2 lines of therapy and over 57% having prior Venetoclax based therapy. The addition of Actimab-A to CLAG-M was well tolerated with expected toxicities.

Dr. Sameem Abedin, Assistant Professor at Froedtert & Medical College Wisconsin and Principal Investigator of the Study, commented, "The high rates of MRD negativity and strong survival outcomes, especially in the TP53 mutant and Venetoclax treated patients, is

highly encouraging and represents a significant improvement compared to available therapies for these patients. The patients enrolled on this trial have very difficult to treat AML and a dismal prognosis with an expected survival of 2 to 3 months or less. They also have very limited treatment options. High rates of 1-year survival are rare in these patients and 2-year survival is rarely achieved. With Venetoclax treatment becoming standard of care, it is critical that we find a therapy for the high percentage of patients who do not respond or relapse and therapies with better outcomes for all relapsed or refractory patients. Outside of this novel clinical trial, these patients would not have been considered for CLAG-M treatment as it would not be expected to have this type of effect in patients who had failed venetoclax based on our considerable prior experience with this regimen. Importantly, the combination was well tolerated with manageable toxicities and enabled a significant number of patients to proceed to transplant. These data support advancing the Actimab-A CLAG-M combination in a registration enabling study."

Overall Survival

Patients	12-month Overall Survival	24-month Overall Survival
All (n=23)	53 %	32 %
CRc MRD Negative (n=9)	89 %	48 %
TP53 mutation (n=13)	51 %	19 %
Prior Venetoclax (n=13)	59 %	32 %
$1^{st}/2^{nd}$ Salvage (n=14)	61 %	49 %

Dr. Avinash Desai, Actinium's Chief Medical Officer, commented, "As a first-in-class targeted radiotherapy, Actimab-A represents a novel treatment for patients with relapsed or refractory AML. Its differentiated mechanism of action attacks leukemia cells with a radioactive payload that the cancer cells have never been exposed to, which we believe is driving improved outcomes in these heavily pretreated and adverse cytogenetic patients. The high rates and deep remissions evidenced by the 75% measurable residual disease negativity are exciting and support the hypothesis of this combination. We are thrilled to show improved survival, especially in the TP53 mutant and Venetoclax treated patients who have dismal outcomes with expected survival of less than 3 months and few, if any, treatment options. With enrollment of this study complete, we look forward to leveraging the strong survival, MRD negativity and complete remission results to rapidly establish an efficient development and regulatory strategy."

MRD Negativity and Response Rates

- **MRD negativity was 75% in patients achieving CRc, assessed by multiparametric flow cytometry.**

Response	Recommended Phase 2 Dose (n=8)	Prior Venetoclax Therapy (n=13)	All Patients (n=23)
CR	13 %	15 %	22 %
CRi	50 %	15 %	30 %
CRc (CR/CRi)	**63 %**	**31 %**	**52 %**
Bridged to BMT	50 %	75 %	64 %

Patient Characteristics

- Patients received a median of two lines of prior therapy (Range: 1 – 5 lines)
- 57% received prior treatment with Venetoclax
- 67% of patients had adverse cytogenetics, 52% had TP53 mutations
- 52% of patients had secondary AML or treatment related AML

References:

1) Maiti et al. Outcomes of relapsed or refractory acute myeloid leukemia after front-line hypomethylating agent and venetoclax regimens. Hematoligica 2021 Mar 1; 894-898

2) Ganzel et al. Very poor long-term survival in past and more recent studies for relapsed AML patients: The ECOG-ACRIN experience. American Journal of Hematology. 2018 Aug; 93(8): 1074–1081

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. Actinium's clinical pipeline is led by radiotherapies 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 bone marrow transplant (BMT), gene therapy or adoptive cell therapy, such as CAR-T, to enable engraftment of these transplanted cells with minimal toxicities. Our lead product candidate, I-131 apamistamab (Iomab-B) has been studied in over four hundred patients, including the pivotal Phase 3 Study of Iomab-B in Elderly Relapsed or Refractory Acute Myeloid Leukemia (SIERRA) trial for BMT conditioning. Topline data from the SIERRA trial was positive with the study meeting its primary endpoint with a high statistical significance ($p<0.0001$). Additional data from the SIERRA trial is expected to be presented at a BMT focused medical conference in 2023. 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 with NIH funding. Actimab-A, our second most advanced product candidate has been studied in approximately 150 patients with Acute Myeloid Leukemia or AML, including in ongoing combination trials with the chemotherapy regimen CLAG-M and with venetoclax, a targeted therapy. Actimab-A or lintuzumab-Ac225 is an Actinium-225 based antibody radiation conjugate targeting CD33, a validated target in AML. Actinium is a pioneer and leader in the field of Actinium-225 alpha therapies with an industry leading technology platform comprising over 190 patents and patent applications including methods of producing the radioisotope AC-225. Our technology and expertise have enabled collaborative research partnerships with Astellas Pharma, Inc. for solid tumor theranostics, with AVEO Oncology Inc. to create an Actinium-225 HER3 targeting radiotherapy for solid tumors, and with EpicentRx, Inc. to create targeted radiotherapy combinations with their novel, clinical stage small molecule CD47-SIRPα inhibitor. More information is available on Actinium's 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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