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Actinium Initiates Second Dosing Cohort of Novel Combination Trial with Actimab-A and CLAG-M Salvage Regimen at Medical College of Wisconsin

- Combination trial is exploring the potential synergies between targeted internalized radiation via Actimab-A and chemotherapy

NEW YORK, Feb. 4, 2019 /PRNewswire/ --**Actinium Pharmaceuticals, Inc.** (NYSE AMERICAN: ATNM) ("Actinium" or the "Company") announced today that the Medical College of Wisconsin (MCW) has started dosing patients in the second cohort of its novel trial of Actimab-A in combination with CLAG-M in patients with relapsed or refractory AML or Acute Myeloid Leukemia. This trial is evaluating the impact that the addition of targeted internalized radiation via Actimab-A to the salvage chemotherapy regimen CLAG-M will have on safety and tolerability, response rates, rates of BMT or bone marrow transplant, PFS or progression-free survival, and OS or overall survival.

Dr. Mark Berger, Chief Medical Officer of Actinium, said, "This trial represents an exciting advancement of our CD33 program that is aligned with our clinical strategy to pursue combinations utilizing our ARC drug candidates. We are pleased to be moving ahead with MCW to the second cohort of this trial and we are optimistic that our ARC combination strategy will have a positive impact on patient outcomes by improving response rates, duration of responses and/or increasing the rate of patients receiving a bone marrow transplant. Chemotherapy and external radiation are routinely used in combination in several cancers but despite being radiation sensitive, AML is not treated with external radiation given its diffuse nature. Therefore, the ability to deliver radiation internally in a targeted fashion to AML cells with potency and tolerability gives us great confidence in our ARC approach. In addition, this trial is particularly important as AML patients with relapsed or refractory disease face a poor prognosis with limited treatment options."

In this Phase 1 combination trial patients are administered the salvage chemotherapy regimen CLAG-M, which consists of cladribine, cytarabine, filgrastim, and mitoxantrone, followed by a single dose of Actimab-A. Actimab-A is an ARC or Antibody Radiation-Conjugate that consists or the CD33 targeting monoclonal antibody lintuzumab labelled with the alpha-particle emitting isotope Ac-225 or Actinium-225. In the first dose cohort, patients received 0.25 uCi/kg of Actimab-A. This combination trial is designed as a 3+3 dose escalation study. No dose limiting toxicities (DLTs) were reported in the first patient cohort. As a result, and per the study protocol, the Institutional Review Board (IRB) at MCW has authorized the initiation of the second dosing cohort, in which patients will receive 0.50 uCi/kg of Actimab-A. Assuming no DLTs are observed in the second cohort, three patients will be treated and the study will progress to the third and final cohort will study Actimab-A at

a dose of 0.75 uCi/kg.

Sandesh Seth, Actinium's Chairman and Chief Executive Officer of Actinium, said, "In recent months, Actinium's R&D and clinical teams have worked together to identify opportunities to further utilize our ARCs in combination with other therapeutic modalities. As a result, we are exploring multiple R&D and clinical initiatives with ARC based combination therapies. With the ARC combination strategy solidified as a corporate focus, we are delighted to see this positive progress from our first Actimab-A combination trial with CLAG-M. We are confident that the use of targeted radiation will prove synergistic with multiple modalities and open several therapeutic opportunities that are not possible with any other technology. We look forward to making continued progress on this front including the planned clinical trials with Actimab-A and venetoclax."

About Actinium Pharmaceuticals, Inc.

Actinium Pharmaceuticals Inc. is focused on improving patient access and outcomes to cellular therapies such as bone marrow transplant (BMT) and CAR-T with its proprietary, chemotherapy free, targeted conditioning technology. Actinium is the only company with a multi-disease, multi-target, drug development pipeline focused on targeted conditioning. Its targeted conditioning technology is enabled by ARCs or Antibody Radio-Conjugates that combine the targeting ability of monoclonal antibodies with the cell killing ability of radioisotopes. Actinium's pipeline of clinical-stage targeted conditioning ARCs target the antigens CD45 and CD33 for patients with a broad range of hematologic malignancies including acute myeloid leukemia (AML), myelodysplastic syndrome (MDS) and multiple myeloma (MM).

Iomab-B, Actinium's lead targeted conditioning product candidate, is currently enrolling patients in the pivotal Phase 3 SIERRA trial in patients age 55 or older, with active, relapsed or refractory AML. Iodine-131 apamistamab (Iomab-B), combines the anti-CD45 monoclonal antibody labeled with iodine-131 for myeloablation prior to a bone marrow transplant. CD45 is expressed on leukemia, lymphoma and normal immune cells. Iomab-B has been studied in over 500 patients in 10 clinical trials in numerous hematologic diseases. Actinium's Iomab-ACT program is an expansion of its CD45 program that is intended to be a universal, chemo-free solution for targeted lymphodepletion prior to CAR-T. Through targeted lymphodepletion, the Iomab-ACT program is expected to improve CAR-T cell expansion, reduce CAR-T related toxicities and expand patient access to CAR-T treatment and potentially other adoptive cell therapies. Due to its lower payload dose, lymphodepletion with the Iomab-ACT program can be accomplished through a single outpatient infusion. Actinium intends to advance its Iomab-ACT program with CAR-T focused collaborators from academia and industry.

Actinium's pipeline also includes a potentially best-in-class CD33 program with its ARC comprised of the anti-CD33 antibody lintuzumab labeled with the alpha-particle emitter actinium-225. Its CD33 program is currently being studied in multiple Phase 1 clinical trials for targeting conditioning, in combinations and as a therapeutic in multiple diseases and indications including AML, MDS and MM.

Actinium is also developing its proprietary AWE or Antibody Warhead Enabling technology platform which utilizes radioisotopes including iodine-131 and the highly differentiated actinium-225 coupled with antibodies to target a variety of antigens that are expressed in

hematological and solid tumor cancers. The AWE technology enables Actinium's internal pipeline and with the radioisotope Actinium-225 is being utilized in a collaborative research partnership with Astellas Pharma, Inc. Actinium's clinical programs and AWE technology platform are covered by a portfolio of over 75 patents covering composition of matter, formulations, methods of use and also methods of manufacturing the radioisotope Actinium-225 in a cyclotron.

More information is available at www.actiniumpharma.com and our Twitter feed @ActiniumPharma, www.twitter.com/actiniumpharma.

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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