

**Astellas Announces  
a Research Collaboration with Actinium  
for Molecular Targeted Radiotherapy**

*- Aiming for the development of theranostics, which integrates diagnostics and therapeutics, as one of the Rx+<sup>®</sup> businesses -*

**TOKYO, January 13, 2021** - Astellas Pharma Inc. (TSE: 4503, President and CEO: Kenji Yasukawa, Ph.D., “Astellas” ) has entered into a research collaboration for molecular targeted radiotherapies with Actinium Pharmaceuticals, Inc. (NYSE AMERICAN: ATNM, Chief Executive Officer and Chairman of the Board: Sandesh Seth, “Actinium”). This collaboration is a component of Astellas’ initiative to develop “theranostics” as part of its Rx+<sup>®</sup> business<sup>1</sup>.

Theranostics is a combined term of “therapeutics” and “diagnostics”, defined as a treatment protocol or concept in which healthcare professionals assess lesion sites and simultaneously determine the appropriate treatment for each patient<sup>2</sup>. Through utilization of a diagnostic agent developed in parallel with a therapeutic agent that shares the same target, it may be possible to identify patients in advance who would benefit from the treatment. This approach may help healthcare professionals provide more efficient and effective treatment.

In this collaboration, the potential therapeutic effect will be assessed by combining certain targeted oncology drugs that were discovered by Astellas based on its drug discovery capabilities cultivated thus far with Actinium’s nuclear medicine technology which utilizes an alpha particle-emitting radioisotope<sup>3</sup> (Actinium-225). Astellas is already conducting pre-clinical trials of the diagnostic agents on the target molecule. When a promising therapeutic drug candidate is identified in the course of this collaboration, clinical trials for the theranostics may be initiated.

Through its Rx+<sup>®</sup> business, Astellas aims to realize a society where people can live in their own way, both physically and mentally through scientifically based on scientific evidence. Astellas aims to optimize therapeutic approach by improving diagnostic and surgical accuracy and maximize patient outcomes. The development of theranostics that integrates diagnostics and therapeutics is part of this effort.

Astellas has already reflected the impact from this collaboration in its financial forecast of the current fiscal year ending March 31, 2021.

(1) Rx+<sup>®</sup> business: A business that leverages the expertise and knowledge of Astellas, which has been cultivated through its prescription drug (Rx) business, integrates innovative medical technology with cutting-edge technology in different fields, contributes to patients through Patient Journey (overall medical care, including diagnostic, preventive, therapeutic, and prognostic care), and creates new revenue streams separate from Astellas' core Rx products. For more information, please visit <https://www.astellas.com/en/partnering/rx-plus>



(2) Chen XS, Theranostics. 2011; 1:1-2.

(3) Alpha-emitting radioisotope: Radioisotope emitting alpha particle during radioactive decay. Alpha particle has a short particle path length and high linear energy transfer, and is expected to demonstrate high cell-killing efficiencies selectively against the accumulated site.

#### **About Astellas**

Astellas Pharma Inc. is a pharmaceutical company conducting business in more than 70 countries around the world. We are promoting the Focus Area Approach that is designed to identify opportunities for the continuous creation of new drugs to address diseases with high unmet medical needs by focusing on Biology and Modality. Furthermore, we are also looking beyond our foundational Rx focus to create Rx+<sup>®</sup> healthcare solutions that combine our expertise and knowledge with cutting-edge technology in different fields of external partners. Through these efforts, Astellas stands on the forefront of healthcare change to turn innovative science into value for patients. For more information, please visit our website at <https://www.astellas.com/en>.

#### **Cautionary Notes**

In this press release, statements made with respect to current plans, estimates, strategies and beliefs and other statements that are not historical facts are forward-looking statements about the future performance of Astellas. These statements are based on management's current assumptions and beliefs in light of the information currently available to it and involve known and unknown risks and uncertainties. A number of factors could cause actual results to differ materially from those discussed in the forward-looking statements. Such factors include, but are not limited to: (i) changes in general economic conditions and in laws and regulations, relating to pharmaceutical markets, (ii) currency exchange rate fluctuations, (iii) delays in new product launches, (iv) the inability of Astellas to market existing and new products effectively, (v) the inability of Astellas to continue to effectively research and develop products accepted by customers in highly competitive markets, and (vi) infringements of Astellas' intellectual property rights by third parties.

Information about pharmaceutical products (including products currently in development) which is included in this press release is not intended to constitute an advertisement or medical advice.

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