

October 24, 2017

The Kitasato Institute
Sumitomo Dainippon Pharma Co., Ltd.

**Kitasato Institute and Sumitomo Dainippon Pharma Signs a Joint Drug Discovery
Research Agreement for Infections Caused by Bacteria with Antimicrobial Resistance
(AMR)**

The Kitasato Institute (Location: Minato-ku, Tokyo, Japan; Chairperson: Hirosuke Kobayashi) and Sumitomo Dainippon Pharma Co., Ltd. (Head Office: Osaka, Japan; President: Masayo Tada; hereinafter referred to as “Sumitomo Dainippon Pharma”) today announced that they have signed a joint drug discovery research agreement for infections caused by bacteria with antimicrobial resistance (AMR).

Pursuant to this joint research agreement, a drug discovery group led by Dr. Satoshi Omura, Distinguished Emeritus Professor of Kitasato University and the 2015 laureate of the Nobel Prize in Physiology or Medicine, will engage in therapeutic drug discovery research for antimicrobial resistant bacterial infections together with a research group from Sumitomo Dainippon Pharma. This joint R&D initiative has been selected by the Japan Agency for Medical Research and Development (AMED) for its Cyclic Innovation for Clinical Empowerment (CiCLE) grant program.

The emergence and spread of antimicrobial drug-resistant bacteria has become a global problem. If no actions are taken to address this issue, it is estimated that by 2050 the infections caused by these pathogens will claim 10 million deaths each year and a total of 100 trillion dollars in economic losses, and urgent measures are being called for both on national and international levels under the leadership of the World Health Organization (WHO). Meanwhile, the Government of Japan formulated its National Action Plan on Antimicrobial Resistance in 2016, which cites research and development of new therapeutic agents for infections with drug-resistant bacteria as a critical issue.

The Kitasato Institute has a long tradition and track record in infectious disease research and, under the leadership of Dr. Omura, aims to discover innovative anti-infective drugs. Sumitomo Dainippon Pharma, meanwhile, has created its carbapenem antibiotic MEROPEN® (brand name; generic name: meropenem hydrate) and accumulated knowledge in research and development in the area of infectious diseases.

Under the framework of this joint research, the Kitasato Institute and Sumitomo Dainippon Pharma will aim to provide groundbreaking anti-infective drugs through unprecedented and original approaches.

(Reference)

Overview of the joint research

Objectives: To discover therapeutic agents against antimicrobial resistant bacterial infections

Duration: 10 years from October, 2017 (subject to change)

Research organization: Sumitomo Dainippon Pharma will send its researchers to Dr. Omura's drug discovery group at Kitasato University to form a mixed research team.

About Antimicrobial Resistance (AMR)

Antimicrobial resistance refers to a phenomenon where the efficacies of specific types of antimicrobial drugs, such as antibiotics and antivirals, are reduced or rendered ineffective against infections caused by microorganisms (bacteria, fungi, viruses, and parasites). Once the population of these drug-resistant bacteria or viruses increase, the drugs become ineffective, resulting in the increasing likelihood of serious illness or fatalities from infections that would normally be kept mild with proper treatment.

About the Cyclic Innovation for Clinical Empowerment (CiCLE)

As a project of the Japan Agency for Medical Research and Development (AMED), the Cyclic Innovation for Clinical Empowerment (CiCLE) aims to formulate an innovative infrastructure (including human resources) for accelerating promotion of research and development and practical use of drug discovery activity outcomes in ways that precisely match the needs of medical professionals, and to create an environment in which development of open innovation ventures in medical research and development is empowered by uniting Japan's collective strengths through industry-university-government cooperation.

The "Drug discovery research aiming at development of agents against infections with bacteria showing antimicrobial resistance (AMR)" joint initiative between the Kitasato Institute and Sumitomo Dainippon Pharma (Representative organization: Sumitomo Dainippon Pharma) has been selected as a research and development project through an open invitation to the first round of CiCLE grant programs.

About the Kitasato Institute

Following in the footsteps of Dr. Shibasaburo Kitasato, the Kitasato Institute's mission is to respect lives and search for truths about life in a practical way to benefit society. The Institute's founding mission has remained intact to this day, and Dr. Satoshi Omura, Distinguished Emeritus Professor of Kitasato University, has carried on its legacy by achieving the Nobel Prize in Physiology or Medicine in 2015. For more details, please visit the Kitasato Institute website (<https://www.kitasato-u.ac.jp/en/index.html>).

About Sumitomo Dainippon Pharma Co., Ltd.

Sumitomo Dainippon Pharma Co., Ltd., defines its corporate mission as "to broadly contribute to society through value creation based on innovative research and development activities for the betterment of healthcare and fuller lives for people worldwide". By pouring all our efforts into the research and development of new drugs, we aim to provide innovative and effective pharmaceutical solutions to people not only in Japan but also around the world in order to realize our corporate mission. For more details, please visit Sumitomo Dainippon Pharma website (<http://www.ds-pharma.com/>).

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