Nagasaki University and Astellas Launch Collaborative Research for Screening New Anti-Dengue Virus Drugs for Neglected Tropical Diseases - Selection of Potential Compounds by Evaluation of Anti-Dengue Virus Activities -

Nagasaki and Tokyo, Japan, March 21, 2013 – The Nagasaki University (“Nagasaki University”; Nagasaki, Japan; President: Shigeru Katamine) and Astellas Pharma Inc. (“Astellas”; Tokyo: 4503; President and CEO: Yoshihiko Hatanaka) today announced that they have signed a collaborative research agreement to discover new drugs for the treatment of neglected tropical diseases (“NTDs”) caused by dengue virus. This is the second execution of a collaborative research agreement on NTDs after the Nagasaki University and Astellas signed the previous one to discover new drugs for the treatment of NTDs caused by protozoan parasites on November 12, 2012.

NTDs, prevalent mainly in tropical areas of developing countries, are infectious diseases spread by parasites, bacteria or viruses. As it is estimated that approximately one billion people are affected with NTDs worldwide, NTDs are a serious healthcare issue that is being addressed on a global scale. Among them, diseases caused by dengue virus, such as dengue fever/dengue hemorrhagic fever are with high unmet medical needs for treatment and development of new therapeutic drugs. There is no existing drug to treat dengue fever/dengue hemorrhagic fever in the market as well as under development, and the effectiveness of some vaccines to prevent dengue virus currently under development is unclear at this time.

Under the collaborative agreement, the Institute of Tropical Medicine at Nagasaki University (“NEKKEN”), which is one of the leading research institutes on tropical infectious diseases in Japan, and Astellas will cooperate on a drug-discovery research project. Astellas will provide multiple compounds with possible anti-dengue virus activities, and NEKKEN will evaluate these compounds in experimental model of infections with dengue virus for dengue fever/dengue hemorrhagic fever. The research will be advanced with advice from Professor Kouichi Morita, M.D., Ph.D., at the Department of Virology in NEKKEN, who is a key opinion leader on tropical infection research in Japan.

The collaborative research is largely divided into two phases. In the first phase (first screening), the anti-dengue virus activities and cytotoxic activities of compounds will be measured in vitro. In the second phase (second screening), compounds found to be with anti-dengue virus activities in the first screening will be tested for in vivo activity by evaluating drug efficiency in animals infected with the dengue virus.

The Nagasaki University and Astellas will work together to accelerate the discovery of new drugs for patients suffering from dengue fever/dengue hemorrhagic fever in the world, through their collaborative research aiming to contribute to improve global public health problems.
Institute of Tropical Medicine, Nagasaki University (“NEKKEN”)
The Institute of Tropical Medicine at Nagasaki University (“NEKKEN”) is the only public sector institute for researching tropical diseases that is supported by the Ministry of Education, Culture, Sports, Science and Technology, Japan (MEXT), which authorized it as the National Collaborative Research Center on Tropical Disease. NEKKEN engages in a wide range of research from basic to applied, on NTDs (parasite infections, leishmaniasis, Chagas disease, sleeping sickness, and dengue fever), malaria, AIDS, tuberculosis, and emerging infections mainly derived from zoonotic infections, such as viral hemorrhagic fever, etc. It has a 70-year history and is recognized by the World Health Organization as a WHO Collaborating Center for Tropical and Emerging Viral Infections. NEKKEN also participates in the National BioResource Project, under which it is responsible for the field of pathogenic protozoa and maintains and manages pathogenic agents to be used for research. In 2005, NEKKEN set up educational research stations in Kenya and Vietnam to further accelerate its clinical and epidemiological research. In 2011, it established the Department of Clinical Product Development and began full-scale development of drugs and vaccines for NTDs.

http://www.tm.nagasaki-u.ac.jp/nekken/english/index.html

Astellas Pharma Inc. (Astellas)
Astellas’ raison d’etre is to contribute toward improving the health of people around the world through the provision of innovative and reliable pharmaceutical products. Astellas has approximately 17,000 employees worldwide. The organization is committed to becoming a global category leader in Urology, Immunology (including Transplantation) and Infectious Diseases, Oncology, Neuroscience and DM Complications and Kidney Diseases. For more information on Astellas Pharma Inc., please visit the company website at

http://www.astellas.com/en/

Astellas is committed to improving “Access to Health” in developing countries through its partnership initiatives. As part of the contribution to Access to Health, Astellas is committed to undertake an initiative of drug discovery for patients infected with and suffering from NTDs in the world by utilizing its know-how and assets of drug discovery research.

* Access to Health: Many therapeutic areas and diseases with high unmet medical needs remain in the world. Furthermore, there are many people who are unable to access adequate medical care due to poverty or weak health systems. Astellas recognized these remaining issues as “Access to Health” and proactively addresses them as responsible corporate citizen.
Neglected tropical diseases (NTDs)

NTDs are infections caused by parasites, bacteria and viruses which are mainly endemic in tropical areas of developing countries. It is estimated that over 1 billion people are affected worldwide only with the 17 diseases of NTDs on which currently WHO is focusing on. Since these patients do not have enough access to needed medicine and healthcare, NTDs are not only a global health challenge but are said to be associated with poverty and affect economic growth in developing countries.

Group of 17 diseases: Buruli ulcer, Chagas disease (American trypanosomiasis), cysticercosis, dengue fever/dengue hemorrhagic fever, dracunculiasis (guinea-worm disease), echinococcosis, foodborne trematode infections, human African trypanosomiasis, leishmaniasis, leprosy, lymphatic filariasis, onchocerciasis, rabies, schistosomiasis, soil transmitted helminthiasis, trachoma, endemic treponematoses (including yaws)

Dengue Fever/Dengue Hemorrhagic Fever

Dengue fever/dengue hemorrhagic fever are dengue virus infections spreading along with the mosquitoes (mainly, *Aedes aegypti*). Usually, partial of dengue fever which is non-fatal febrile disease can progress to a severe disease called dengue hemorrhagic fever. Dengue virus infections are mosquito-borne disease which spread to tropical/subtropical areas like South-eastern Asia, South Asia, Central and South America and Caribbean countries, also occur in Africa, Australia, China and Taiwan.

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