Nagasaki University and Astellas Launch Collaborative Research for Screening New Anti-Protozoan Drugs for Neglected Tropical Diseases

Selection of Potential Compounds by Evaluation of Anti-Protozoan activities -

Nagasaki and Tokyo, Japan, November 12, 2012 – The Nagasaki University and Astellas Pharma Inc. (Tokyo:4503,”Astellas”) today announced that they have signed a collaborative research agreement to discover new drugs for the treatment of neglected tropical diseases (“NTDs”) caused by protozoan parasites.

NTDs, prevalent mainly among the poor in tropical areas of developing countries, are infectious diseases spread by parasites or bacteria. 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 protozoan parasites, such as leishmaniasis, Chagas disease and sleeping sickness are with high unmet medical needs for treatment and development of new therapeutic drugs.

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/protozoan activities, and NEKKEN will evaluate these compounds in experimental model of infection with protozoan parasites for leishmaniasis, Chagas disease and sleeping sickness. The research will be advanced with advice from Professor Kenji Hirayama at NEKKEN, who is a key opinion leader on NTDs research in Japan.

The collaborative research is largely divided into two phases. In the first phase (first screening), the parasiticidal effect of compounds against three species of protozoan parasites will be measured in vitro. In the second phase (second screening), compounds found to be effective for killing protozoan parasites in the first screening will be tested for in vivo activity by evaluating parasitemia and survival rates in animals infected with the protozoan parasites. Organ-specific infection levels will also be measured using a live imaging method.

The Nagasaki University and Astellas will work together to accelerate the discovery of new drugs for patients suffering from NTDs caused by protozoan parasites 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 Ebola hemorrhagic fever, etc.. It has a 70-year history and is recognized by the World Health Organization as a collaborating center for tropical viral infection. NEKKEN also participates in the National BioResource Center 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 research stations in Kenya and Vietnam to accelerate its clinical and epidemiological research. In 2012, 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.

*: 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.

(1) Neglected tropical diseases (NTDs)
NTDs are infections caused by parasite, bacteria and virus 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/severe dengue, 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)

(2) Leishmaniasis
Leishmaniasis occurs in 98 countries, and 350 million people are exposed to risk worldwide. The parasite that leads to this infection is called Leishmania and is transmitted by a sandfly. Leishmaniasis is a poverty-associated disease with several different forms. Visceral leishmaniasis, which is fatal without treatment, and cutaneous leishmaniasis are the most common. Existing treatments are difficult to administer, toxic, and/or costly. Drug resistance also is an increasing problem.

(3) Chagas disease (American trypanosomiasis)
Chagas disease is endemic in 21 countries across Latin America and kills more people in the region than any other parasite-borne disease, including malaria. In total, 100 million people are at risk worldwide and patient numbers are growing in non-endemic countries such as the United States and Australia, as well as some European countries. The disease is transmitted by an insect known as the ‘kissing bug’ and, without treatment, is potentially fatal. Existing treatments are known to have serious safety limitations and their efficacy diminishes the longer the patient has been infected.

(4) Sleeping sickness (human African trypanosomiasis, or HAT)
Sleeping sickness threatens millions of people in sub-Saharan Africa. The disease is transmitted by the tsetse fly’s sucking blood. Without treatment in the initial phase, which causes general symptoms, the disease progresses to a second stage where mental debilitation occurs, and the patient often dies within six months to three years. Although the disease is fatal if left untreated, existing treatments are toxic, difficult to administer, and/or have severe side effects.

(5) Live imaging method
The live imaging method enables observation of how pathogenic organisms behave in vivo by visualizing the state of immune reactions of the host viawhole body imaging like a CT scan and an x-ray films. Use of a fluorescent labeled pathogenic organism or a chemical compound that visualizes immune reactions enables long-term observation of the state of infection, which permits fast and efficient evaluation of in vivo activity of drugs.
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