

**EISAI ENTERS COLLABORATION WITH LIVERPOOL SCHOOL OF TROPICAL  
MEDICINE AND UNIVERSITY OF LIVERPOOL TO DISCOVER NOVEL  
ANTI-WOLBACHIA TARGETED ANTI-FILARIAL DRUGS**  
*JOINT RESEARCH PROJECT AWARDED GHIT FUND GRANT*

Eisai Co., Ltd. (Headquarters: Tokyo, President & CEO: Haruo Naito, "Eisai") announced today that it has entered a collaboration with the Liverpool School of Tropical Medicine (Liverpool, United Kingdom, "LSTM") and University of Liverpool (Liverpool, United Kingdom, "UoL") to jointly identify new drugs effective against lymphatic filariasis and onchocerciasis (river blindness), both major types of filariasis.

Under the collaboration, Eisai will work with LSTM, a non-profit institution with a mission to develop and implement new tools and technologies for the control and treatment of tropical diseases, and UoL, a world-class academy that has made major contributions toward understanding the mechanisms of drug action of several classes of anti-parasitic drugs, to identify and develop novel drug candidates that efficiently eliminate the bacteria *Wolbachia*. *Wolbachia* live inside the parasitic worms, known as filariae, that cause lymphatic filariasis and onchocerciasis, two infectious diseases that together affect more than 150 million people worldwide. As filariae are dependent on these *Wolbachia* for growth, development, reproduction and survival, these worms can be effectively eradicated by first eliminating the *Wolbachia* inside them.

While current anti-filarial treatments are effective against larvae and microfilariae, they require many years of consistent, annual mass drug administration in a given endemic community in order to also successfully eliminate the adult worms. Anti-*Wolbachia* therapy is expected to lead to worm sterility and effective worm eradication, thereby reducing treatment timeframes and providing superior therapeutic outcomes compared to existing anti-filarial drugs. Further, as anti-*Wolbachia* programs are still in their infancy, this collaboration is expected to potentially provide a unique opportunity to make a significant contribution to communities affected by filariasis.

To date, the screening of more than 10,000 potential anti-*Wolbachia* compounds has revealed approximately 50 compounds as confirmed hits, leading to identification of about six chemotypes with anti-infective potential. Eisai and its collaboration partners will focus on two of these six proposed types and aim to identify a single candidate for potential drug development within one to two years.

This unique approach was also evaluated and subsequently awarded a two-year grant by the Global Health Innovative Technology Fund (GHIT Fund), an international non-profit organization that aims to promote the discovery of new health technologies for eliminating infectious diseases prevalent in developing countries.

In support of the World Health Organization (WHO)'s program to eliminate lymphatic filariasis by 2020, Eisai is supplying diethylcarbamazine (DEC) free of charge to WHO. Under its collaboration with LSTM and UoL, Eisai aims to make new treatments available as early as possible to patients with filariasis and thereby further increase the healthcare benefits provided to these patients and their families in developing and emerging countries.

**[Please refer to the following notes for further information on anti-*Wolbachia* therapy,  
the Liverpool School of Tropical Medicine, the University of Liverpool, and the GHIT Fund.]**

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## [Notes to editors]

### **1. About Anti-*Wolbachia* Therapy**

Anti-*Wolbachia* therapy is a new method of treatment that eradicates the adult worms that can cause filariasis by eliminating bacteria known as *Wolbachia* that live in the cells of their bodies. This approach has the potential to significantly reduce the timescale of elimination programs, to provide alternatives to existing treatments, and to deliver tools that can be used in areas where current approaches are failing or cannot be deployed. Doxycycline, an antibiotic, is believed to work in this way and proof of concept has already been established in human field trials, which showed excellent results although requiring four to six weeks of daily treatment and being unsuitable for administration to children and pregnant women.

Under its collaboration with the Liverpool School of Tropical Medicine (LSTM) and University of Liverpool (UoL), Eisai will aim to identify potential new drug compounds that act more quickly and more effectively than doxycycline and that could be used across all population groups, and to develop these molecules to the stage of pre-clinical safety testing.

### **2. About the Liverpool School of Tropical Medicine and the University of Liverpool**

The Liverpool School of Tropical Medicine (LSTM) is a non-profit charitable institution with a mission to develop and implement new tools and technologies for the control and treatment of tropical diseases. LSTM has an existing anti-*Wolbachia* program funded by the Bill & Melinda Gates Foundation and has developed assays and models to test compounds for anti-*Wolbachia* activity on a large scale.

The Department of Chemistry at the University of Liverpool (UoL) has made major contributions toward understanding the mechanisms of drug action of several classes of anti-parasitic drugs. Over their 20 years in partnership, UoL and LSTM have adopted a “molecule to man” strategy to instigating their research projects, operating at all stages of the drug discovery pipeline up to and including clinical trials in humans. To date, a total of three projects have contributed to the portfolio of the Medicines for Malaria Venture (MMV), an organization that has developed the largest portfolio of anti-malarial drugs in history.

### **3. About the Global Health Innovative Technology Fund**

The Global Health Innovative Technology Fund (GHIT Fund) is an international non-profit organization aimed at advancing the research and development of new health technologies from Japan to fight infectious diseases prevalent specifically in the developing world, including HIV/AIDS, malaria, tuberculosis, and neglected tropical diseases (NTDs). Established as a public-private partnership between the Government of Japan, a consortium of pharmaceutical companies, and the Bill & Melinda Gates Foundation, the GHIT Fund facilitates and funds research and development of new health technologies through partnership creation and grant-making activities. For further information, please visit: [www.ghitfund.org](http://www.ghitfund.org)