

Shionogi enters into a new license agreement and research collaboration for the treatment of mycobacterial diseases with Hsiri Therapeutics, Inc.

OSAKA, Japan, October 11, 2019 - Shionogi & Co., Ltd. (Head Office: Osaka; President and CEO: Isao Teshirogi, Ph.D.; hereafter “Shionogi”) today announced that it has entered into a new license agreement with Hsiri Therapeutics, Inc. (Head Office: Media, PA, USA; President and CEO: William Claypool, M.D.; hereafter “Hsiri”) regarding a collaborative research and development program to discover and develop additional novel therapeutics for non-tuberculous mycobacterial (NTM) diseases and tuberculosis (TB). This new collaboration will include technology that complements Shionogi’s earlier collaboration arrangement with Hsiri.

The new technology to be licensed from Hsiri has a novel mechanism of action, will be complementary to Shionogi’s current research with Hsiri, and is anticipated to be more effective than current therapies for mycobacterial infections. Shionogi's strength in small molecule drug discovery and development in the antibacterial area will support development of Hsiri's innovative therapeutics in this collaborative program. Under the terms of this agreement, Shionogi will have exclusive worldwide rights to develop, manufacture, and commercialize the compounds generated from the collaboration. Hsiri will receive an upfront license fee, potential development milestones, and royalty payments based on sales from Shionogi.

It is reported that the number of patients suffering from NTM diseases has been increasing especially in developed countries in recent years. There is a medical need to develop novel anti-NTM drugs because of the long duration of treatment and insufficient treatment outcome of current therapeutics. TB is one of the three major infectious diseases in the world¹, and new cases of TB are estimated to be 10.4 million/year.² Multidrug-resistant TB (MDR-TB) and extensively drug-resistant TB (XDR-TB) have become a major public health concern, and novel drugs for MDR-TB and XDR-TB are anticipated.

Shionogi's research and development targets infectious disease as one of its priority areas, and Shionogi have positioned “protecting people from the threat of infectious diseases” as one of its social mission targets. Through this cooperation, Shionogi strives constantly to bring forth innovative drugs for the treatment of infectious diseases, to protect the health of patients we serve.

1. HIV/AIDS, tuberculosis, malaria
2. WHO : Global Tuberculosis Report 2017

About Shionogi & Co., Ltd.

Shionogi & Co., Ltd. is a Japanese major research-driven pharmaceutical company dedicated to bringing benefits to patients based on its corporate philosophy of “supplying the best possible medicine to protect the health and wellbeing of the patients we serve.” The company currently markets products in several therapeutic areas including anti-infectives, pain, cardiovascular diseases and

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gastroenterology. Our pipeline is focused on infectious disease, pain, CNS and oncology. For more details, please visit <http://www.shionogi.co.jp/en/>.

About Hsiri Therapeutics, Inc.

Hsiri Therapeutics, Inc. is a pre-clinical stage company specializing in novel antimicrobials. Hsiri was founded based on technology and assets licensed from the University of Notre Dame. Hsiri's business model is to acquire discovery phase compounds by license and internal research and to develop them to pharmacologic proof of concept. Hsiri's portfolio includes novel compounds for the treatment of mycobacterial diseases, drug resistant gram-negative bacterial infections, and drug-resistant anaerobic bacterial infections. For further information, please visit <http://www.hsiritherapeutics.com/>.

Forward-Looking Statements

This announcement contains forward-looking statements. These statements are based on expectations in light of the information currently available, assumptions that are subject to risks and uncertainties which could cause actual results to differ materially from these statements. Risks and uncertainties include general domestic and international economic conditions such as general industry and market conditions, and changes of interest rate and currency exchange rate. These risks and uncertainties particularly apply with respect to product-related forward-looking statements. Product risks and uncertainties include, but are not limited to, completion and discontinuation of clinical trials; obtaining regulatory approvals; claims and concerns about product safety and efficacy; technological advances; adverse outcome of important litigation; domestic and foreign healthcare reforms and changes of laws and regulations. Also for existing products, there are manufacturing and marketing risks, which include, but are not limited to, inability to build production capacity to meet demand, unavailability of raw materials and entry of competitive products. The company disclaims any intention or obligation to update or revise any forward-looking statements whether as a result of new information, future events or otherwise.

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