



Eisai Co., Ltd. Keio University

## EISAI AND KEIO UNIVERSITY TO ESTABLISH A NEW INDUSTRY-ACADEMIA COLLABORATION SITE

ACCELERATING THE DISCOVERY OF NOVEL DRUG TARGETS THAT MAY LEAD TO DEVELOPMENT OF NEW THERAPEUTICS FOR DEMENTIA

Eisai Co., Ltd. (Headquarters: Tokyo, CEO: Haruo Naito, "Eisai") and Keio University (President: Atsushi Seike) announced today that they have entered into a new joint research agreement for the discovery and development of new drugs targeting dementia. For this collaborative research, a research lab will be established, and researchers from Eisai and Keio University will work together to identify and validate novel drug targets and biomarkers that could potentially lead to the development of new therapeutics and preventive medicines for dementia.

Under this joint research agreement, Eisai and Keio University will establish the Eisai-Keio Innovation Lab for Dementia (tentative name) as a base for industry-academia collaboration within Keio University's Shinanomachi campus (Shinjuku ward, Tokyo) that will hopefully spur new innovation in the treatment of dementia. The lab will be an integrated research site for clinical medicine and basic medicine, and will be staffed by experienced researchers from both organizations.

Beginning with the Center for Supercentenarian Medical Research, Keio University possesses strengths in researching medicine and medical care through unifying basic and clinical science. Keio University has also published extensively about its world-class research into human iPS cells.

Eisai, which utilizes a drug development technology that produces small molecule compounds, mid-size compounds derived from natural products and antibodies, has been active in the field of developing new dementia drugs for over 30 years. Together with information provision activities relating to Aricept® (donepezil hydrochloride), Eisai has accumulated a vast amount of experience and knowledge in the field of dementia.

At the Innovation Lab, Eisai and Keio University will bring together their respective strengths and, using new approaches that focus on genetic backgrounds, environmental factors, and protective mechanisms based upon healthy longevity, aim to speed up research of new drug targets and biomarkers for dementia as well as increase the probability of success in new drug discovery. The Innovation Lab will perform three functions: Clinical Omics Analysis, utilizing the latest mass spectroscopy technology; Data Science, utilizing artificial intelligence to determine new drug targets; and Biological Validation, which makes use of human iPS cell technology to advance the study of drug target biology. These research functions, along with the central concept of "Bidirectional Translation Cycle", which repeatedly generates new hypotheses based on human biology and validates them with models, will lead to accurate understanding of the disease, through which useful biomarkers and drug targets can be discovered and applied towards new therapeutics.

"Dementia is one of the major social and medical issues in an aging society, and Eisai's mission is to contribute to overcoming this issue" said Teiji Kimura, Chief Discovery Officer of the Eisai Neurology Business Group. "Eisai's strengths are its computational technology, drug discovery and biomarker research capabilities in the field of neurology. Through this Innovation Lab, we can collaborate with Keio University which has world-class iPS cell technology and expertise in basic medical science and clinical science, leading to new innovations, and allowing us to get new treatments to patients as soon as possible."

Hideyuki Okano, Dean of Keio University School of Medicine remarked "The establishment of this innovation lab allows us to combine Eisai's accumulated experience of dementia drug discovery such as Aricept® with Keio University's supercentenarian medical research and dementia research, mutually boosting our competitive power, and culminating in an amazing opportunity to develop practical applications."

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## <Notes>

## 1. About Keio University

Keio University promotes comprehensive research on topics directly related to fields of life science and medical care through close cooperation among various faculties, graduate schools, and advanced research centers, such as the Faculty of Medicine, Faculty of Nursing and Medical Care, Faculty of Pharmacy, Faculty of Science and Technology, and Faculty of Environment and Information Studies; as well as the Institute for Advanced Biosciences (IAB).

In particular, Keio University is noted as a center of research excellence in Japan in the fields of regenerative medicine using iPS and stem cells, as well as in immunology. In 2014, the Clinical and Translational Research Center was established in Keio University Hospital to coordinate all stages of the R&D process from translational research to clinical studies and clinical trials.

On March 25, 2016, Keio University Hospital was accredited as a Core Clinical Research Hospital under the Medical Care Act promoting high-quality clinical research and clinical trials necessary to develop the next generation of innovative medicines and medical devices in Japan; and for its role as a leading hospital conducting investigator-initiated clinical trials and clinical research at an international standard.

As the School of Medicine approaches its centennial anniversary in 2017, it is accelerating its efforts to further improve its capabilities as a world-leading comprehensive center for medical education, research, and care.

For more information about Keio University, please visit www.keio.ac.jp/en/

## 2. About Eisai

Eisai Co., Ltd. is a leading global research and development-based pharmaceutical company headquartered in Japan. We define our corporate mission as "giving first thought to patients and their families and to increasing the benefits health care provides," which we call our *human health care* (*hhc*) philosophy. With approximately 10,000 employees working across our global network of R&D facilities, manufacturing sites, and marketing subsidiaries, we strive to realize our *hhc* philosophy by delivering innovative products to address unmet medical needs, with a particular focus in our strategic areas of neurology and oncology.

In the neurology area, Eisai places special emphasis on its drug discovery efforts, with the aim of prevention and cure for dementia. Including the development of its next-generation Alzheimer's disease treatments BACE (beta amyloid cleaving enzyme) inhibitor elenbecestat (development code: E2609) and anti-amyloid beta (A $\beta$ ) protofibril antibody BAN2401, as well as the development of dual orexin receptor antagonist lemborexant (development code: E2006) to satisfy the unmet medical needs of patients with Irregular Sleep-Wake Rhythm Disorder (ISWRD) and dementia, Eisai possess an abundant pipeline of products.

Additionally, Eisai is making active efforts in collaboration with its principle stakeholders to improve access to medicines in emerging and developing countries.

For more information about Eisai Co., Ltd., please visit www.eisai.com