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Eisai Co., Ltd.

INDUSTRY-ACADEMIA-GOVERNMENT JOINT DEVELOPMENT AGREEMENT CONCERNING NUCLEIC ACID DRUG DISCOVERY RESEARCH USING NOVEL NUCLEIC ACID SYNTHESIS AND DELIVERY TECHNOLOGIES CONCLUDED *RESEARCH ACTIVITIES COMMENCE*

Eisai Co., Ltd. (Headquarters: Tokyo, CEO: Haruo Naito, “Eisai”) announced today that its research subsidiary KAN Research Institute, Inc. (Headquarters: Hyogo, “KAN”) has entered into an industry-academia-government joint research agreement with six joint research organizations* concerning the “nucleic drug discovery research using novel nucleic acid synthesis and delivery technologies” research project represented by KAN. This joint research project was selected by the Japan Agency for Medical Research and Development (AMED) for its Cyclic Innovation for Clinical Empowerment (CiCLE) grant program. Believing that creating innovation through industry-academia-government collaboration is an important initiative, Eisai is currently advancing multiple projects, with this project aimed at creating a Japan-originated nucleic acid drug through industry-academia-government collaboration.

Nucleic acid drugs are medicines with a basic structure consisting of deoxyribonucleic acid (DNA), ribonucleic acid (RNA) or chemical modified nucleic acids, and are manufactured via chemical synthesis similar to small molecule drugs. With nucleic acid drugs, it has now become possible to directly act upon intracellular molecules (genes) with high specificity, which are difficult to target with conventional medicines. Based on these characteristics, there are high hopes for drug discovery in many disease areas. On the other hand, there is a need for technologies that can avoid toxicity and a need to establish delivery technologies that can reliably make nucleic acid drugs reach the target cells effectively and safely.

This research project aims to build a proprietary nucleic drug discovery platform by mobilizing innovative nucleic acid technologies for delivery primarily developed by Eisai, artificial nucleic acid synthesis technologies developed by Osaka University, screening technologies established by The National Institute of Biomedical Innovation, Health and Nutrition, nucleic acid production technologies owned by GeneDesign Inc., and then use this platform to discover nucleic acid drug candidates with potentially superior safety and efficacy. Eisai, KAN, Tokyo Women’s Medical University, Niigata University and The National Cancer Center Hospital East will cooperate to conduct non-clinical and clinical studies.

As key initiatives for industry-academia-government collaboration in which Eisai is participating, a project aiming to identify and verify novel drug discovery target candidates linked to the development of next-generation treatments and preventative medicines for dementia at the Eisai-Keio Innovation Lab for Dementia (EKID) (Location: Keio University Shinanomachi campus) has also been selected by AMED for the CiCLE program. In addition, an initiative originated in Japan to develop biomedicines and new markers for Crohn’s disease represented by Eisai’s gastrointestinal disease business subsidiary EA Pharma Co., Ltd. has also been selected by AMED for CiCLE. Furthermore, an initiative for treating inflammatory bowel disease using small molecules and biomarkers through the University of Tsukuba and EA Pharma Co., Ltd. has been adopted by the Japan Science and Technology Agency’s Newly extended Technology transfer Program (NexTEP).

By creating new innovation based on industry-academia-government collaboration and fulfilling unmet medical needs, Eisai is striving to contribute to increasing the benefits for patients and their families.

*Joint research organizations:

Osaka University (Location: Osaka)

The National Institute of Biomedical Innovation, Health and Nutrition (Location: Osaka)

GeneDesign, Inc. (Headquarters: Osaka)

Tokyo Women's Medical University (Location: Tokyo)

Niigata University (Location: Niigata)

The National Cancer Center Hospital East (Location: Chiba)

Media Inquiries:

Public Relations Department,

Eisai Co., Ltd.

+81-(0)3-3817-5120

[Notes to editors]

1. About CiCLE

AMED's CiCLE is a grant program to promote the establishment of infrastructure (including human resources) to respond to medical needs and the creation of an environment for open innovation and venture development based on industry-academia-government collaboration.

2. About Nucleic Acid Drugs

Nucleic acid drugs are medicines with a basic structure consisting of deoxyribonucleic acid (DNA), ribonucleic acid (RNA) or chemical modified nucleic acids, and are manufactured via chemosynthesis similar to small molecule drugs. With nucleic acid drugs, it has now become possible to directly act upon intracellular molecules (genes) that are highly specific, which are difficult to target with conventional medicines. On the other hand, in order to develop a greater number of various nucleic acid drugs, there is a need for technologies that can avoid toxicity and a need to establish delivery technologies that can reliably make nucleic acids reach the target cells.

There are several types of nucleic acid drugs with differences in structure, targeting and mechanism of action, and pharmaceutical products such as antisense therapies that target RNA as well as aptamers that bind to proteins outside cells and interfere with their function have been approved (including in Japan).

3. About KAN Research Institute Inc.

KAN Research Institute, Inc. (KAN) is a 100% wholly owned research and development subsidiary of Eisai Co., Ltd. KAN is a research group that aims to discover and develop new drugs based on novel therapeutic concepts in order to fulfill unmet medical needs with truly original science. Initially established with its strengths in Integrative Cell Biology for Medicine, KAN undertakes drug discovery and research activities that seek to find novel disease mechanisms and treatment paradigms by focusing on the characteristics of specific cell types and molecule localization that cause disease. Located within the Kobe Biomedical Innovation Cluster since 2006, KAN established a new research headquarters in 2014 and has continued to develop open innovation with research groups and researchers both within and outside the company. Furthermore, KAN discovered the world's first anti-fractalkine antibody E6011, which is currently being investigated in clinical studies for rheumatoid arthritis, Crohn's disease, and other diseases.