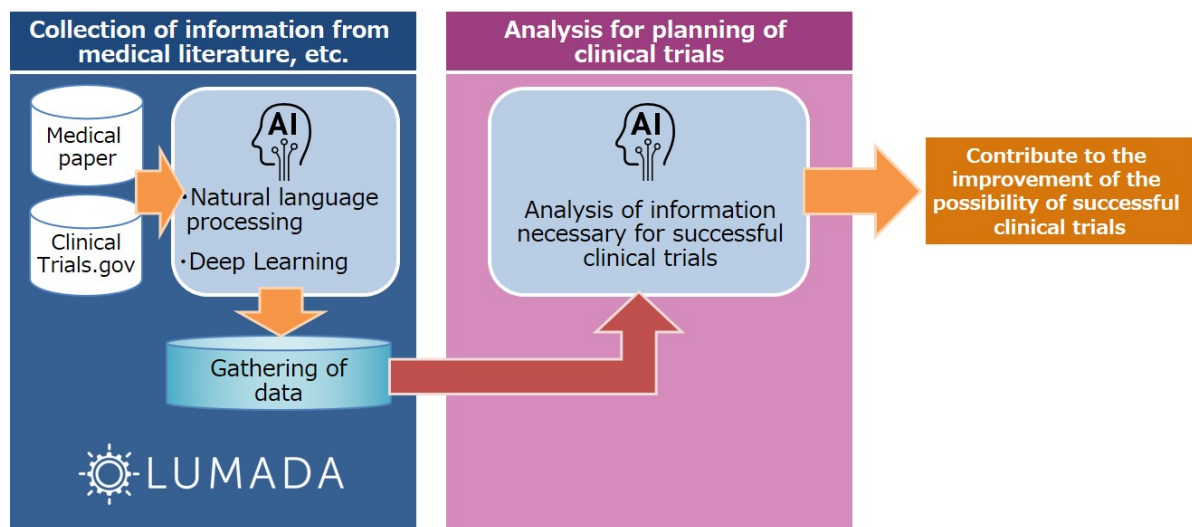


FOR IMMEDIATE RELEASE

## Mitsubishi Tanabe Pharma and Hitachi Utilize AI Technology to Begin Collaborative Creation for Improving Efficiency of Clinical Trials for New Drug Development

Aiming to shorten the period of clinical trial and reduce development cost, and improve the probability of successful new drug development



Conceptual diagram of joint demonstration experiment in the area of clinical trial

**Tokyo, March 26, 2018** --- Mitsubishi Tanabe Pharma Corporation (TSE: 4508, Mitsubishi Tanabe Pharma) and Hitachi, Ltd. (TSE: 6501, Hitachi) today announced that they have initiated collaborative creation for improving the efficiency of clinical trials for the development of new drugs. The companies undertake a wide range of operations to make clinical trials more efficient overall, using Hitachi's advanced digital technology such as AI <sup>(1)</sup>, aiming to shorten the period for development of new drugs and reduce development cost, while improving the probability of successful development.

The business environment surrounding pharmaceutical companies in Japan is expected to become increasingly severe given the lowering of drug prices and the substantial increase of the market share of generics. For the business to achieve continued growth, a review of the process for the fast development of new drugs that satisfy unmet medical needs <sup>(2)</sup> is required. In particular, clinical trials in which new drugs are administered to humans for evaluating efficacy and safety as well as possible side-effects are an important process for the successful development of new drugs. However, since the elaborate design of a trial plan is needed, a huge amount of time and the know-how as well as the experience of skilled experts are necessary.

To meet these challenges, Mitsubishi Tanabe Pharma and Hitachi focused on the fact that a lot of time is spent searching and collecting information from technical knowledge in medicine such as medical papers and ClinicalTrials.gov<sup>(3)</sup> in the planning stage of clinical trials, and the two companies began considering automated information search and collection jointly at the beginning of 2017. By utilizing AI technology such as natural language processing and deep learning<sup>(4)</sup>, which the Research & Development Group of Hitachi has developed for medical use, the companies have confirmed that the time spent collecting information is shortened by about 70% when compared with conventional operations, which depend on the know-how of skilled experts, while the accuracy of the data collected and organized is also verified, so that the companies have obtained a perspective on the feasibility of full-scale use.

Mitsubishi Tanabe Pharma and Hitachi have initiated collaborative creation for making a wide range of operations related to the entire clinical trial process more efficient. Mitsubishi Tanabe Pharma, with a corporate philosophy of that “We contribute to the healthier lives of people around the world through the creation of pharmaceuticals,” has long been involved in the research and development of pharmaceuticals, having an advantage in its extensive medical knowledge and wide ranging capabilities for drug discovery. Meanwhile, Hitachi utilizes the knowledge and experience that it has accumulated as a manufacturer over many years, and the digital solution created by its IoT platform “Lumada,” undertaking the social innovation business to provide solutions to the issues of its clients. The two companies use their technology and know-how, collaboratively working on improving the efficiency of clinical trials by using an array of advanced digital technologies, including AI. In addition, the companies plan to expand the scope of their collaborative creation in the future to undertake a wide range of demonstration experiments.

As a first step, Hitachi will roll out a solution of automated technology for collection of information from medical literature to the pharmaceutical industry in Japan and overseas starting in 2018. This automated solution will be developed through collaborative creation with utilization of Hitachi’s IoT platform, “Lumada.”

(1) AI: Artificial Intelligence

(2) Unmet medical needs: medical needs for disease, for which no effective treatment is available.

(3) ClinicalTrials.gov: Database that provides information on ongoing clinical trials and clinical research through the US National Library of Medicine(NLM), which is jointly run by the National Institute of Health(NIH) and the Food and Drug Administration(FDA) in the United States.

(4) Deep learning: Machine learning method using a multi-layer deep neural network

**About Mitsubishi Tanabe Pharma Corporation**

Mitsubishi Tanabe Pharma Corporation is a research-driven pharmaceutical company based in Osaka Japan. Mitsubishi Tanabe Pharma is taking on the challenge of drug discovery in the fields of autoimmune disorders, central nervous system diseases, diabetes and kidney diseases, and vaccines. To those ends, the Company is strengthening its R&D pipeline. Mitsubishi Tanabe Pharma contributes to the healthier lives of people around the world through the creation of pharmaceuticals.

<https://www.mt-pharma.co.jp/e>

**About Hitachi, Ltd.**

Hitachi, Ltd. (TSE: 6501), headquartered in Tokyo, Japan, delivers innovations that answer society's challenges. The company's consolidated revenues for fiscal 2016 (ended March 31, 2017) totaled 9,162.2 billion yen (\$81.8 billion). The Hitachi Group is a global leader in the Social Innovation Business, and it has approximately 304,000 employees worldwide. Through collaborative creation, Hitachi is providing solutions to customers in a broad range of sectors, including Power / Energy, Industry / Distribution / Water, Urban Development, and Finance / Government & Public / Healthcare. For more information on Hitachi, please visit the company's website at <http://www.hitachi.com>

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