Aichi Cancer Center

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Fujitsu Laboratories Limited
Aichi Cancer Center
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Fujitsu Laboratories and Aichi Cancer Center in Japan Sign Comprehensive Joint Research Agreement to Drive Advances in Cancer Genomic Medicine with AI Technology

Utilizing AI technology to streamline information analysis and contribute to progress in an emergent, yet vital frontier of medical science

Tokyo, Japan November 29, 2019--Fujitsu Laboratories Ltd. and Aichi Cancer Center (note 1) have successfully concluded a comprehensive cooperative research agreement to leverage newly developed AI technology to improve the efficiency of cancer genome information analysis and contribute to advances in the field of cancer genomic medicine (note 2).

The joint research, which builds on Fujitsu Laboratories' recent collaborative efforts with the Institute of Medical Science at the University of Tokyo and AI technologies cultivated by Fujitsu Laboratories (note 3), will draw on knowledge and issues identified through the research and clinical studies of cancer genome medical care at Aichi Cancer Center, as well as large-scale genomic data and medical records held by the Center.

Ultimately, the results of the joint research by Aichi Cancer Center and Fujitsu will lead to the development of various AI technologies that offer the potential to innovate cancer genome medical care at Aichi Cancer Center and affiliated medical institutions.

Background and Details of the Joint Research

The Aichi Cancer Center in Japan aims to establish a system that links the results of multigene panel testing for cancer (note 4) to future, advanced medical care for cancer patients.

In the emergent field of genomic cancer medicine, a board of molecular tumor specialists interprets the results of a patient's cancer gene profile to formulate appropriate treatment plans based on their unique circumstances. This process remains very time consuming, however, proving a challenge for the Aichi Cancer Center and other institutions engaged in this field—as the number of genetic tests increases, the burden on doctors, who must interpret results on an individual basis, continues to mount.

To address this challenge, Fujitsu Laboratories and Aichi Cancer Center intend to create a new AI technology to improve the viability of cancer genomic medicine, drawing on technology initially developed by Fujitsu Laboratories in a joint research project with the Institute of Medical Science at the University of Tokyo.

The new technology will be developed using aggregated data for genomic and clinical profiles mainly for solid cancers held in trust by the Aichi Cancer Center, with the main purpose of improving the efficiency of interpreting the results of comprehensive genomic analyses. The project will focus on improving functions that can clarify the relationship between genomic profiles in cancers and their responsiveness to anti-cancer reagents for cancer therapies. The goal of the initiative is to ultimately expand the scope of cancers that can be targeted by genomic medicine and to deliver treatments optimized for each patient.

Roles in the Joint Research Collaboration

Fujitsu Laboratories

・Development of basic technological elements necessary for database construction and integration of clinical information and genomic profiles for each disease area using AI technology.

・Development of new technologies to support diagnosis and the selection of therapeutic reagents in cancer genomic medicine and knowledge discovery for establishing novel algorithms for therapies.

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・Provision of patient-specific cancer genomic profiles and medical records with consideration for the protection of personal information.

・Offering information on how to interpret, review, and select treatments for various types of cancer, including solid tumors.

・Verification of the newly developed AI technology in a clinical setting.

Future Plans

Fujitsu Laboratories and the Aichi Cancer Center will integrate the results of the joint research into a series of functions that supports cancer genomic medicine together with AI technology developed to date, and apply these to hospitals in the Tokai region. In addition, cancer genome data for various cases collected from patients at hospitals will be registered in a common reference database, which will be continuously expanded to develop integrated functions that enable more comprehensive and reliable selection of anti-cancer drugs. This joint research initiative will allow the two institutions to make a significant contribution to the advancement of cancer genomic medicine in Japan.

Notes

1) Aichi Cancer Center

Designated by the Minister of Health, Labour and Welfare as a hub hospital for cancer genome medical care.

2) Cancer Genomic Medicine

A form of treatment for cancer based on genomic alterations/profiles, which offers medical professionals more effective treatment plans using of therapeutic drugs selected based on genomic variants/profiles to deliver “precision medicine,” tailored to individual patients

3) In a joint research project with the Institute of Medical Science at the University of Tokyo, Fujitsu Laboratories Ltd. has developed AI technology that makes the examination of treatment policies for acute myeloid leukemia more efficient and precise. The project utilizes a database developed by Fujitsu Limited in cooperation with the Japan Agency for Medical Research and Development as part of the "Program for an Integrated Database of Clinical and Genomic Information.” Details in the following press release:
https://www.fujitsu.com/global/about/resources/news/press-releases/2019/1106-01.html

4) Multigene Panel Testing for Cancer

Multigene panel testing is transforming clinical management of patients with cancer. The Japanese government approved reimbursement of two cancer genome profiling systems under universal health coverage in June 2019. These testing systems promise to play an important role in the expansion of the emergent field of cancer genomic medicine.

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About Fujitsu

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About Fujitsu Laboratories

Founded in 1968 as a wholly owned subsidiary of Fujitsu Limited, Fujitsu Laboratories Ltd. is one of the premier research centers in the world. With a global network of laboratories in Japan, China, the United States and Europe, the organization conducts a wide range of basic and applied research in the areas of Next-generation Services, Computer Servers, Networks, Electronic Devices and Advanced Materials. For more information, please see: https://www.fujitsu.com/jp/group/labs/en/.

About Aichi Cancer Center

Aichi Caner Center is one of the largest and oldest comprehensive cancer centers in Japan. For more than 50 years, the Aichi Cancer Center has been a leader in cancer research and treatment, offering state-of-the art care available and advancing the knowledge for future improvement. Our dedicated clinical and research staff, who are working passionately and collaboratively, are relentlessly committed to providing hope to currently uncurable patients and making cancer a disease of the past. For more information, please see: https://www.pref.aichi.jp/cancer-center/english/cc/index.html.