



News Release

Partnership Launches Research Project to Deliver Innovative Personalized Cancer Therapies

Kyoto, Japan – December 6, 2021 – Kyoto University, SCREEN Holdings Co., Ltd., AFI Corporation and Kyo Diagnostics K.K. have officially launched a joint research project targeting the development of innovative personalized cancer therapies. The project is designed to create high-precision in vitro technologies that utilize patient cells to predict the impact of different treatments. It has been established as a collaborative research course* under the Industry-Government-Academia Collaboration Program operated by Kyoto University.

Cancer treatment generally involves the use of surgical, radiation and drug therapies, which are administered in accordance with relevant guidelines based on scientific evidence. While pharmaceutical options, in particular, are increasing every year as new medicines become available, the nature of each patient's cancer can vary significantly. This currently makes it difficult to predict the likely effects of drugs before beginning administration.

For this reason, unless a therapeutic effect is observed after starting treatment, patients may have little choice but to switch to another medication, placing both a heavy physical and financial burden on them. The reality of this situation has become a key factor driving the development of personalized medicine, which is expected to provide more effective therapies that precisely match the characteristics of individual diseases.

Recognizing these trends, Kyoto University, SCREEN, AFI and KyoDiagnostics have established a dedicated laboratory within Kyoto University's Medical Innovation Center. The facility will enable the partners to perform joint research leading to the development of new personalized cancer therapies that use the patient's own cells to accurately predict the effects of different treatments in vitro.

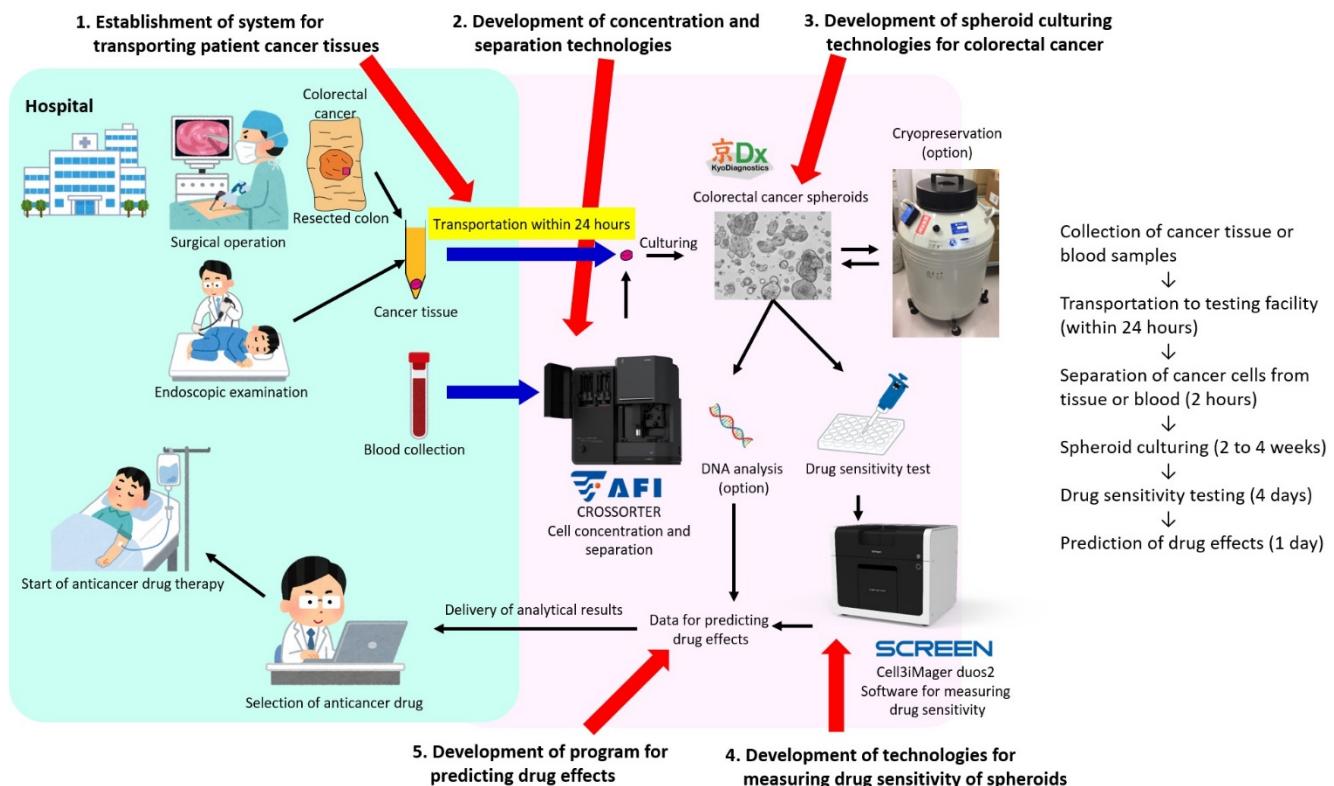
The project will utilize specific knowhow possessed by each partner, namely Kyoto University's advanced medical research knowledge, SCREEN's diverse imaging technologies, AFI's unique cell sorting and separating technologies employing microfluidic channels and electrode arrays and KyoDiagnostics' unique spheroid culturing technologies, which allow cells collected from patients to be grown under conditions similar to those within the human body. The partners will work together to stage a series of demonstration experiments, with the goal of delivering a system able to predict the therapeutic effects of different cancer treatments in approximately two years.

With this joint research project, Kyoto University, SCREEN, AFI and KyoDiagnostics hope to accelerate the implementation of innovative personalized therapies for cancer. Progress in this area is also expected to promote advances in related treatment fields, helping to address a variety of medical issues currently facing society.

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* Project-type joint research that is conducted using the courses, organizational structures and educational/research facilities of a graduate school, based on collaborations between industry, government and academia. The expenditure required for operation is usually covered by funds provided by private institutions for joint research.

System for Predicting Effects of Cancer Therapies (Proposed)



Comments by Project Partners

■ Kazutaka Obama, Professor of Gastrointestinal Surgery, Graduate School of Medicine Kyoto University
 Our division has adopted the motto “Everything is for our patients’ happiness.” We always try to keep this in mind and maintain a patient-centered approach while providing medical care and engaging in research activities. In this new industry-academia initiative with SCREEN, AFI and KyoDiagnostics, our division is looking forward to expanding the research we have completed in collaboration with “Personalized Therapeutics for Colon Cancer Patients,” a research project that has already seen the development of a 3D culturing method for cells derived from colorectal cancer patients. The ability to predict the impact of cancer therapies on each individual will certainly help us to achieve our goal of bringing happiness to our patients.



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■ Masaki Yoshioka, Senior Corporate Officer in charge of technology development, SCREEN Holdings Co., Ltd.

SCREEN is currently working to expand our business into the life sciences field, a new area for us, by applying the technologies we have successfully developed over many years in the production of electronic devices. Our company has gained particular expertise with imaging technologies, which are also expected to provide a range of environmental benefits. It is my hope that joint research like this new project, conducted through industry-academia collaboration, and our continuing business expansion will make a positive contribution to the development of cancer therapies and the wider medical field.

■ Takaharu Enjoji, President of AFI Corporation

AFI has succeeded in bringing our highly innovative AMATAR® filtering technology to market as part of CROSSORTER®, an advanced system enabling label-free sorting and analysis of cells. Using this technology, we are continuing to research methods for damage-less separation of cancer cells. We hope these findings will help us make a meaningful contribution to the goal of this new joint research project, specifically the development of personalized cancer therapies.

AMATAR, CROSSORTER are registered trademarks of AFI Corporation.

■ Kazuhide Konishi, Representative Director of Kyo Diagnostics K.K.

This new collaborative research course is an innovative, first of its kind initiative that will take on the challenge of delivering a next-generation medical system for personalized cancer therapies – something that has yet to be achieved anywhere in the world. Although KyoDiagnostics possesses the technologies required to selectively and efficiently culture cancer spheroid cells, we feel it would be difficult for a venture company such as ours to deliver personalized cancer therapies while working alone. By joining this research course, we hope to further accelerate our collaborative efforts with a variety of university, research and corporate organizations, with the goal of creating truly personalized treatments as quickly as possible.

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