

Support for Startup Ecosystem Formation

Adoption year: FY 2022

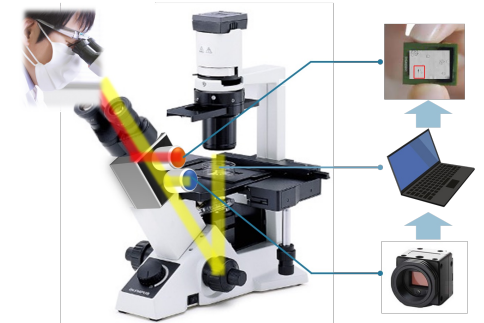
Principal Investigator: Tokyo Medical and Dental University / Professor / Masashi Ikeuchi (As of Aug.2022)

Subject of Research

Development of automation system for assisted reproductive technology

Overview

Requirement of skillful manipulation under microscope in fertility treatment causes a shortage of embryologists to take charge of the process and a variation in the success rate. We aim to solve issues by automating the various processes of assisted reproductive technology to solve the problems faced by patients, medical institutions, and embryologists.



Business Models(when applying)

1) Automated sperm sorting using machine learning and microdevices; 2) Automating work under the microscope using micromanipulators; 3) Seamless peripheral technology to enable these to be effective in the clinical setting; In addition to the initial installation cost of these integrated services, we are considering charging a periodic fee for dedicated consumables.

Activity Planning(when applying)

(1) Acquisition of all operational data of ICSI work by embryologists

Since it is necessary to develop automation algorithm, operation data of ICSI performed by skilled embryologists will be collected by installing custom-developed sensors.

(2) On-site verification of the automated ICSI system (PoC)

A set of hardware and software for automating ICSI is developed as a prototype, and usability testing is conducted. Solutions to the issues and problems encountered will be considered, and feedback will be provided to the design for mass production.