Support for Startup Ecosystem Formation

(As of Aug.2022)

Greater Tokyo Innovation Ecosystem

Adoption year:FY 2022 Principal Investigator: Tokyo University of Agriculture and Technology /Associate Professor / Tsutomu Omatsu

Subject of Research

Commercialization of biopharmaceutical production platform using acid-resistant microalgae

Overview

The market for biopharmaceuticals such as antibodies and vaccines is expected to expand in the future, but there are challenges in terms of production cost and delivery efficiency. Therefore, we aim to develop and commercialize a biopharmaceutical production platform using the acid-tolerant, cell-wall-less monoploid microalgae, a type of phytoplankton, to bring inexpensive medicines to patients around the world.

Business Models(when applying)

Our company will use this microalgae to build a platform for the low-cost production of various biopharmaceuticals, which will be licensed to pharmaceutical companies and contract manufacturing companies. Furthermore, we will develop a drug delivery system (DDS) for oral administration utilizing the acid resistance of microalgae, and license it to pharmaceutical companies and contract manufacturing companies.

Activity Planning(when applying)

In this project, we will conduct R&D and develop a business model.

In R&D, we will evaluate whether biopharmaceuticals from microalgae have the same structure and bioactivity as commercially available biopharmaceuticals, and establish basic technology to develop an efficient scale-up methods for mass production. In a business model development, interviews will be conducted with pharmaceutical companies and contract manufacturing companies to understand their needs for cost reduction and simplification of workflow in biopharmaceutical production. In addition, we will identify biopharmaceuticals with high production needs among these companies.