

Microbial production of useful compounds by multistep gene introduction system (Fermelanta, Inc.)



Fermelanta

City	Year of Establishment	Founder	Website
Ishikawa, Japan	2022	Shogo Fukizaki Hiromichi Minami Akira Nakagawa	https://fermelanta.com/

Partner VC	Latest round of Fundraising	Valuation
Beyond Next Ventures Inc.	Seed	JPY 800 million

Contact Information :

e-mai: info@fermelanta.com

Website : <https://fermelanta.com/>

○ Business Plan

A lot of compounds with complex chemical structures derived from nature have useful bioactivities promoting human health. But there is a lot of issues for mass production based on traditional processes, especially agricultural cultivation and extraction. The total synthesis by chemical reaction is also technologically difficult, inefficient and unreasonable. We develop artificial microorganisms capable of producing target compounds with high productivity, which would be achieved by introducing more than 20 foreign genes into a microorganism, expressing enzymes functionally and controlling the whole biological system as a living cell. By solving the technical problems with constructing a multi-step biosynthetic pathway of continuous enzymatic reactions, we aim to realize social implementation of the innovative process.

○ Research Outline

In this R&D project, we will solve the technical problems for constructing alternative biosynthetic pathways and improving metabolic systems of cells with our original multi-step genes transfer technology. We taking model compounds with commercial demand but limited supply as examples, especially those requiring complex biosynthetic pathways. Through the construction of prototype cells and their optimization, we aim to achieve practical production yields (at the order of grams per liter) in laboratory culture equipments.

Business Area/Field	Research Period	Research Grant Amount	International collaborative technology demonstration
Materials	STS 2023~2024FY	JPY 192 million	—