

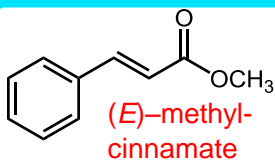


FACULTY OF
BIOSCIENCE &
BIOINDUSTRY
TOKUSHIMA UNIVERSITY

Elucidation of metabolism in forest microorganisms and its application for sustainable production and utilization of lignocelluloses

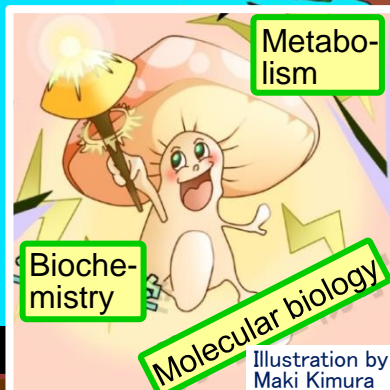
Keywords: wood-rotting fungi, ectomycorrhizal fungi, Asso. Prof. Takefumi Hattori

1. Mechanisms for odor biosynthesis



Ectomycorrhizal fungi

Organic acids



Metabolism

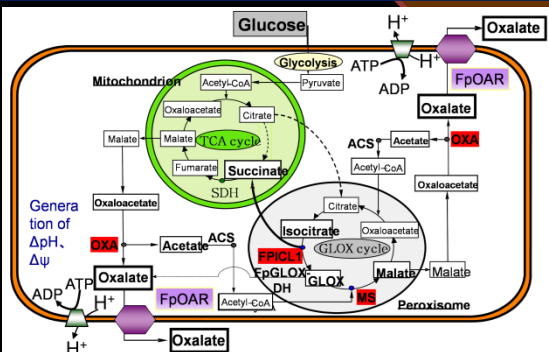
Biochemistry

Molecular biology

Illustration by Maki Kimura

2. Mechanisms for carbon metabolism

Wood-rotting fungi



Enzymes

Organic acids

Humus

3. Sustainable utilization of forest resources

- Isolation of fungi to preserve Japanese cypress forest.
- Development of an artificial drying method to produce Japanese cedar boards and column with high durability.

Three main projects are being conducted with regard to ectomycorrhizal fungi and wood-rotting fungi for sustainable production and utilization of lignocelluloses.

- Mechanisms for odor biosynthesis in the ectomycorrhizal fungus

A pathway for (*E*)-methyl cinnamate biosynthesis is investigated. Characterization of cDNA encoding enzymes involved in the biosynthesis is carried out.

- Mechanisms for carbon metabolism in the wood-rotting fungi and ectomycorrhizal fungi

A mechanism for oxalate biosynthesis in the two fungi are elucidated. (Fund: Grant-in-aid for Scientific Research)

- Sustainable utilization of forest resources

- Isolation and characterization of fungi that degrades litter of Japanese cypress is conducted to develop management of the Japanese cypress forest using the isolated fungi. (Fund: Grant-in-aid for Scientific Research)

- To give an added value for Japanese cedar, development of an artificial drying method to produce Japanese cedar boards and column with high durability is conducted. (Fund: MAFF)

Research field: Forest Science

Major: Wood Science

E-mail: thattori@tokushima-u.ac.jp

Phone: +81-88-656-7183