Production of useful substances by microorganisms and microbial enzymes

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1) Bioconversion of low quality biomass.

Water-plant

Solid media with water-plant

Control

Shellfish waste

Fungal spore

Solid-state culture

Mash

Saccharification

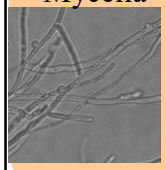
Lactic acid

Buffer

Lactic acid bacteria

2) Development of basidiomycete cell-wall lytic enzyme.

Mycelia



cell-wall lytic enzyme

Protoplasts

Gene transformation
Cell-fusion

Content:

Numerous numbers and species of microorganisms live in nature, and they are found everywhere. A large number of microorganisms are necessary for the production of bread, wine, sake, antibiotics, vaccine, vitamins, biofuels, and many other products.

1) Bioconversion of low quality biomass.

Biotechnological utilization of biomass has been an important subject for decades. We construct novel process utilization low quality biomass.

2) Development of basidiomycete cell-wall lytic enzyme.

Basidiomycetes (mushrooms) are valuable not only as food but also as a microbial resource for transformation of biomass, and for improvement of polluted environments. Breeding with modern biotechnology becomes significant, which requires reproducible protoplasts. We study the cell-wall lytic enzyme from several kind of microorganisms to form protoplasts.

Appealing point:

Our laboratory is studying microbial functions and enzymes to produce the useful substances.

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Research Interest : Applied microbiology

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