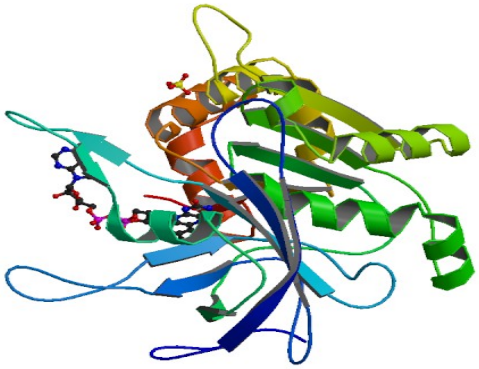
Microbiology – Human food

NEW POLYPEPTIDE HAVING FERREDOXIN-NADP+REDUCTASE ACTIVITY



Description

INRA, INSA and CNRS have isolated from a microorganism, a polypeptid which has a Ferredoxin-NADP+réductase activity. This enzymatic activity confers its modulation. In no-photosynthetics organisms, the FNR is mainly used to provide reduced ferredoxin for various metabolic pathways: nitrogen fixation, terpenoid synthesis, steroids metabolism or the response to oxidative stress and the biogenesis of iron-sulfur proteins.

Type of expected transfer

License on patent or license option with a validation R&D program.

Advantages

The enzyme may allow to consider new heterologous metabolic pathways on products as alcohols. The enzymatic activity can be improved at least 50 % in the microorganism in regard with standard; The process of production of different products can be put in batch, fed-batch and continuously. technology can also be implemented with plants.

Possible applications

Anaerobic fermation production of ethanol; n-butanol; 1,3 propanediol; 1,2 propanediol; isopropanol and acetone.

Key words

Ferredoxin-NADP+ réductase; NADH; butanol; anaerobic

TRL Scale

1 **2** 3 4 5 6 7 8 9

Development level

The developments in metabolic engineering are the most advanced for the anaerobic production of butanol. A Research collaboration / transfer may be considered for development.

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