

L I C E N C E O F F E R

PRODUCTION OF OPTICALLY ACTIVE HALOHYDROCARBONS AND ALCOHOLS USING HYDROLYTIC DEHALOGENATION

Description

Haloalkane dehalogenases (EC 3.8.1.5) are microbial enzymes catalysing the cleavage of a carbon-halogen bond by a hydrolytic mechanism leading to formation of the corresponding alcohols. The biocatalytic application of these enzymes is based on their enantioselectivity in conversion of chiral substances producing optically pure compounds.

Main advantage

Haloalkane dehalogenases are highly stereoselective enzymes that allow stereoselective reactions leading to optically pure products which are difficult to prepare by the methods of organic synthesis. These enzymes do not need any cofactor for the activity, are degradable, non-toxic, non-flammable and operate in mild conditions (neutral pH, ambient pressure and temperature), decreasing energy costs and reducing damage of the environment.

Main use

Biocatalytic preparation of optically active secondary alcohols, hydroxy esters and hydroxyketones for applications in pharmaceutical (intermediates of anti-Alzheimer drugs), agrochemical (pheromones, allumones and kairomones), cosmetic and food (fragrances) industry. Developed platform can be integrated into existing industrial processes or can be used for development of completely new productions of high-value substances.

Development stage

The proprietary technology is at present protected by Czech Patent Application **PV 2004-1240** and International PCT Patent Application **PCT/CZ2005/000099**.

Commercial offer

Leveraging proprietary know-how and technology platform through licensing and collaborations. Contract research focused on development of optimized catalysts and specific applications in biocatalysis.