

Characterization of Marine Epoxide Hydrolase by Bioinformatics based Homology Modeling

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ABSTRACT

Enantiopure epoxides are important chiral synthons for producing optically active compounds[1]. Kinetic resolution of racemic epoxides via an enantioselective hydrolysis reaction by epoxide hydrolase (EH) is a very promising method since enantiopure epoxides with a high optical purity can be obtained from cheap and readily available racemic epoxides[2, 3]. In this presentation, we mined sequence information of putative soluble and microsomal EH from marine bioresources. Phylogenetic relationship of EH in fish and marine microorganisms with other microbial and mammalian EHs was compared to analyze the sequence-activity space. We also screened EH activity from crude enzyme extracts containing fish's putative EH to evaluate the possibility to use marine and fish EH as biocatalysts for the enantioselective resolution of racemic epoxides.

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