

## Epoxide hydrolase-catalyzed enantioselective and enantioconvergent hydrolysis for production of enantiopure epoxides and diols

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Enantiopure epoxides and diols are valuable synthetic intermediates for preparing more complex enantiopure pharmaceuticals. Enantiopure epoxides can be produced by enantioselective hydrolysis of racemic epoxides using epoxide hydrolases (EHs). EHs are cofactor-independent enzymes that convert epoxides to their corresponding diols by addition of a water molecule to the oxirane ring. Some EHs have been shown to have complementary enantioselectivity exhibiting opposite regioselectivity on the two enantiomers of racemic epoxide substrates, indicating that a 100% yield of enantiopure diol with high enantiopurity of up to 100% ee can be prepared by enantioconvergent process. In this presentation, we report on our recent works on enantioselective and enantioconvergent hydrolysis of racemic epoxides using various EHs from microorganisms, fish and marine bioresources to produce enantiopure epoxides and diols.

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