Title (en)

BIOCATALYTIC EPOXIDATION OF VINYLAROMATIC COMPOUNDS

Title (de)

BIOKATALYTISCHE EPOXIDIERUNG VON VINYLAROMATISCHEN VERBINDUNGEN

Title (fr)

EPOXYDATION BIOCATALYTIQUE DE COMPOSES VINYLAROMATIQUES

Publication

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Application

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Priority

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Abstract (en)

[origin: WO0136654A1] Methods for preparation of biocatalysts and processes for application of these biocatalysts for the preparation of selected optically active epoxides with high enantiomeric purity. The methods are based on the stereoselective insertion of an oxygen atom derived from molecular oxygen catalyzed by a microbial monooxygenase enzyme like styrene monooxygenase into vinylaromatic compounds like indene or styrene derivatives as an epoxide function. In particular, these methods are useful for the preparation of (1S, 2R) indene oxide. The enzyme preparations can be used in isolated, purified form or as whole cell preparations in specific recombinant hosts expressing the respective genes of microbial monooxygenases like styrene monooxygenase. Methods for preparing isolated enzymes and recombinant hosts as well as application methods for these systems in organic synthesis are described. Biocatalytic reactions are performed in aqueous medium or in multiphase media possibly containing one or more of the following: a solid phase, an aqueous phase, an organic phase, or a gaseous phase.

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C12P 17/02

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