

Title (en)
METHOD FOR PRODUCING SINGLE ENANTIOMER EPOXIDES BY THE ADH REDUCTION OF ALPHA-LEAVING GROUP-SUBSTITUTED KETONES AND CYCLISATION

Title (de)
VERFAHREN ZUR HERSTELLUNG VON ENANTIOMERENREINEN EPOXIDEN DURCH ADH-REDUKTION VON ALPHA-ABGANGSGRUPPEN-SUBSTITUIERTEN KETONEN UND CYCLISIERUNG

Title (fr)
PROCEDE DE PRODUCTION D'EPOXYDES EXEMPTS D'ENANTIOMERES PAR REDUCTION ADH DE CETONES A SUBSTITUTION D'ALPHA-NUCLEOFUGES ET CYCLISATION

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Application
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Priority
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Abstract (en)
[origin: DE102005028312A1] Preparation of enantiomerically pure epoxides (A) comprises reducing alpha -leaving group-substituted ketones (I) with (R)- or (S)-selective alcohol dehydrogenases (ADH) in the presence of a cofactor and optionally a system for regenerating the oxidized cofactor to give corresponding enantiomerically pure alcohols (B) and subsequent cyclization using a base. Preparation of enantiomerically pure epoxides (A) of formula (IIIa) or (IIIb) comprises reducing alpha -leaving group-substituted ketone compounds (I) of formula (R 1-CO-C(R 2)(R 3)(LG)) with (R)- or (S)-selective alcohol dehydrogenase (ADH) in the presence of a cofactor and optionally a system for regenerating the oxidized cofactor to give corresponding enantiomerically pure alcohols (B) of formula (IIa) or (IIb) and subsequent cyclization using a base. LG : F, Cl, Br, I, OSO 2Ar, OSO 2CH 3, OSO 2R or OP(O)OR 2; and R 1-R 3H, optionally substituted 1-20C alkyl, optionally substituted 3-10C cycloalkyl, alkenyl, optionally substituted (hetero)aryl, CO 2R, CONR 2, COSR, CS 2R, C(NH)NR 2, CN, CHal 3, ArO, ArS, RO, RS, CHO, OH, NHR, NR 2, Cl, F, Br, I or SiR 3. [Image].

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