Title (en)

METHOD FOR THE STEREOSELECTIVE SYNTHESIS OF CHIRAL EPOXIDES BY ADH REDUCTION OF KETONES SUBSTITUTED WITH ALPHA STARTING GROUPS AND CYCLISATION

Title (de)

VERFAHREN ZUR STEREOSELEKTIVEN SYNTHESE VON CHIRALEN EPOXIDEN DURCH ADH-REDUKTION VON ALPHA-ABGANGSGRUPPEN-SUBSTITUIERTEN KETONEN UND CYCLISIERUNG

Title (fr)

PROCÉDÉ DE SYNTHÈSE STÉRÉOSÉLECTIVE D'ÉPOXYDES CHIRAUX PAR RÉDUCTION ADH DE CÉTONES SUBSTITUÉES AVEC DES GROUPES PARTANTS ALPHA, ET CYCLISATION

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Application

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Abstract (en)

[origin: WO2008064817A2] The invention relates to a method for producing chiral epoxides by reducing ketones substituted with a-starting groups with cell-free (R)- or (S)-selective alcohol dehydrogenases in the presence of a cofactor, and optionally a suitable system for the regeneration of the oxidised cofactor to form the chiral alcohols, and subsequent base-induced cyclisation to form the chiral epoxides (EQUATION 1) wherein LG can represent F, Cl, Br, I, OSO_2Ar, OSO_2R_4 or $OP(O)OR_4R_5$ and R_1, R_2 and R_3 independently represent hydrogen, a branched or unbranched, optionally substituted C_1-C_{20} alkyl radical, an optionally substituted C_3-C_{10} cycloalkyl or alkenyl radical or an optionally substituted carbocyclic or heterocyclic aryl radical or a radical from the group consisting of CO_2R_4, $CONR_4R_5$, $COSR_4$, CS_2R_4, $C(NH)NR_4R_5$, CN, $CHal_3$, OAr, SAr, OR_4, SR_4, CHO, OH, NR_4R_5, Cl, F, Br, I or $SiR_4R_5R_6$, where R_4, R_5 and R_6 independently represent hydrogen, a branched or unbranched, optionally substituted C_1-C_{20} alkyl radical, an optionally substituted C_3-C_{10} cycloalkyl or alkenyl radical or a substituted carbocylic or heterocyclic aryl radical, the intermediately formed chiral alcohol II not being isolated.

IPC 8 full level

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