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Applications of sharpless asymmetric dihydroxylation in the total synthesis of natural products

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Abstract

Sharpless asymmetric dihydroxylation involves the reaction of an alkene with osmium tetroxide in the presence of a chiral quinine ligand to form an optically active vicinal diol. This reaction was primarily developed by Sharpless based on the already known racemic Upjohn dihydroxylation. The chiral diols obtained by Sharpless asymmetric dihydroxylation are important intermediates in organic synthesis. Herein, we emphasise the applications of Sharpless asymmetric dihydroxylation in the total synthesis of natural products.

Keyword

Alkaloid, amino acid, asimilobin, cardiobutanolide, chelonin B, cladospolide B, dihydroisocoumarin, dragmacidin E, entiginosine, epicatechin, ether derivative, flavonoid, glutinone, jaspine B, lactone, lipid, lyngbyabellin A, macrolide, natural product, nonenolide, polyketide, pyran derivative, swainsonine, synargentolides B, terpene, trabectedin, triumfettaminde, unclassified drug, unindexed drug, ustiloxin D, asymmetric synthesis, dihydroxylation, drug isolation, drug structure, priority journal, Review.