

Current applications of organocatalysts in asymmetric aldol reactions: An update

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Abstract

The aldol reaction is one of the most important carbon–carbon bond formations in synthetic organic chemistry. An enantioselective aldol reaction should provide an enantioenriched product. The organocatalytic asymmetric aldol reaction via an in situ generated enamine intermediate is one of the most powerful synthetic tools to achieve enantiomerically pure products. This approach is often used to obtain chiral β -hydroxycarbonyl compounds with excellent enantioselectivity. In this report, we update our previous review regarding the applications of organocatalysts in asymmetric aldol reactions leading to chiral β -hydroxycarbonyl compounds as versatile synthetic motifs frequently found in pharmaceutically desired intermediates and biologically active naturally occurring compounds.

Keyword

Acid, alkaloid derivative, amide, amine, azetidine, carbonyl derivative, hydrazide, ionic liquid, metal, oxazoline derivative, peptide, polymer, prolinamide, proline, unclassified drug, urea, aldol reaction, asymmetric catalysis, asymmetric synthesis, catalyst, chirality, Cinchona, nonhuman, organocatalyst, priority journal, Review.