

Asymmetric Michael reaction catalyzed by mimicked peptides

ABSTRACT

Peptides mimicked from active site of promiscuous aldo-ketoreductase were synthesized and tested as asymmetry catalysts in the Michael adduct reaction of aldehydes or ketones with nitroolefins to furnish the corresponding γ -nitroaldehydes, γ -nitroketones with up to 93 % yield, 99:1 dr and 71 % ee at room temperature and on eco-friendly solvents. Aspartic acid residue as second amino acid produced greater enantioselectivity.

Keyword: Michael adduct; Asymmetry; Peptides; Aldo-ketoreductase; Promiscuous