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 Asymmetric Conjugate Reduction of α,β -Unsaturated Esters Using a Chiral Phosphine–Copper Catalyst
J. Am. Chem. Soc. **1999**, *121*, 9473–9474.

Copper-Catalyzed Enantioselective Reduction of α,β -Unsaturated Esters

Category

Metals in Synthesis

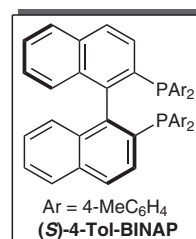
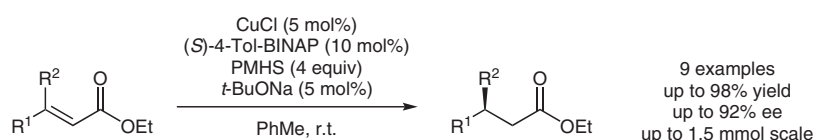
Key words

copper catalysis

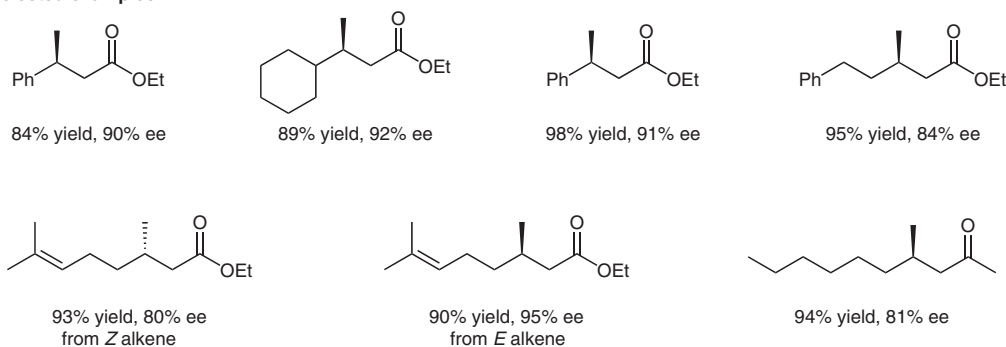
conjugate reduction

silanes

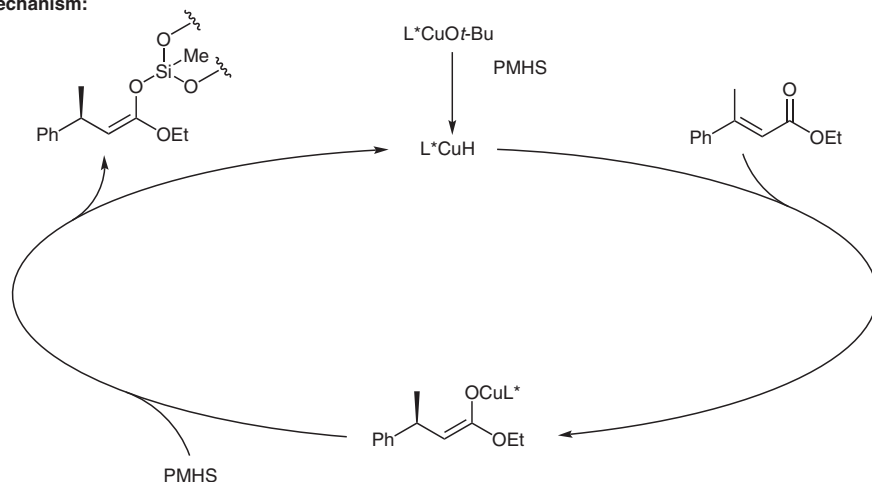
Synfact
Classic



Selected examples:



Proposed mechanism:



Significance: Buchwald and co-workers reported the use of copper and chiral bisphosphine ligands for the enantioselective 1,4-reduction of α,β -unsaturated esters. Polymethylhydroxiloxane (PMHS) was employed as a stoichiometric hydride source.

Comment: Novel methodologies have been developed since this seminal report on the enantioselective hydrofunctionalization of alkenes. Use of DTBM-SEGPHOS as the ligand and other hydride sources are now available for the asymmetric reduction of less activated alkenes.

SYNFACTS Contributors: Mark Lautens, José F. Rodríguez
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