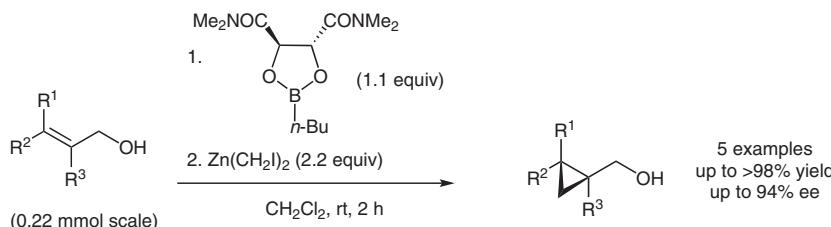
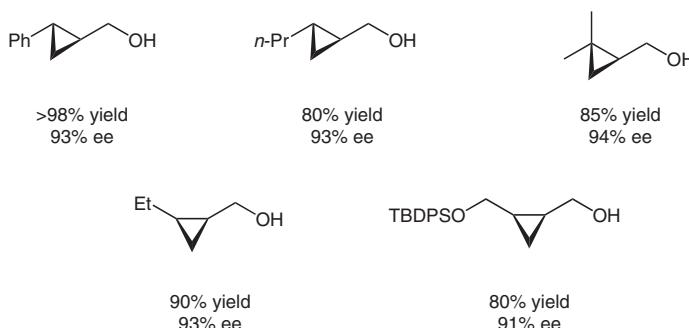


Category
Metals in Synthesis
Key words
zinc
cyclopropanation
Simmons–Smith cyclopropanation

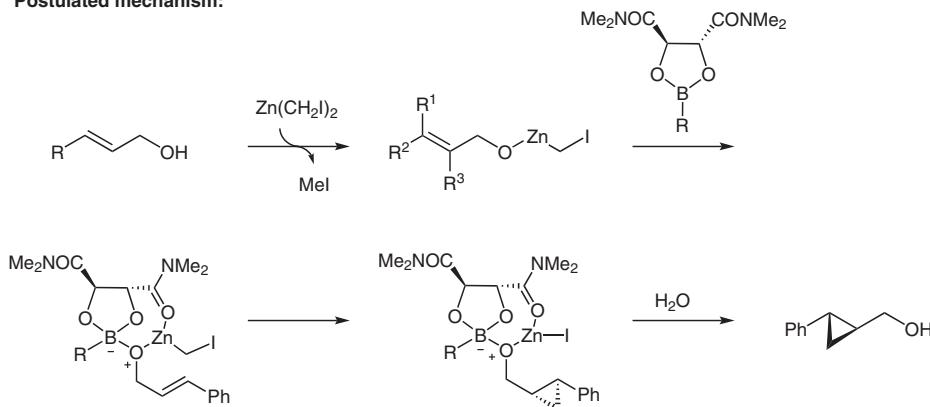
Enantioselective Simmons–Smith Cyclopropanation: The Charette Modification



Demonstrated examples:



Postulated mechanism:



Significance: In the paper, Charette and Juteau described a route towards enantioenriched cyclopropanes using a chiral amphoteric bifunctional ligand. This was the first report that enabled efficient chiral cyclopropane synthesis without reliance on covalently bonded chiral auxiliaries.

Comment: This modification tolerates various functional groups and is highly enantioselective. The chiral ligand could also be recovered through an aqueous extraction at the end of the reaction.

Reviews: A. B. Charette, J.-F. Marcoux *Synlett* **1995**, 1197–1207; H. Lebel, J.-F. Marcoux, C. Molinaro, A. B. Charette *Chem. Rev.* **2003**, *103*, 977–1050.