

Q.-K. KANG, L. WANG, Q.-J. LIU, J.-F. LI, Y. TANG* (SHANGHAI INSTITUTE OF ORGANIC CHEMISTRY AND COLLABORATIVE INNOVATION CENTER OF CHEMICAL SCIENCE AND ENGINEERING, TIANJIN, P. R. OF CHINA)

Asymmetric H₂O-Nucleophilic Ring Opening of D–A Cyclopropanes: Catalyst Serves as a Source of Water
J. Am. Chem. Soc. **2015**, *137*, 14594–14597.

Copper-Catalyzed Asymmetric Ring Opening of D–A Cyclopropanes

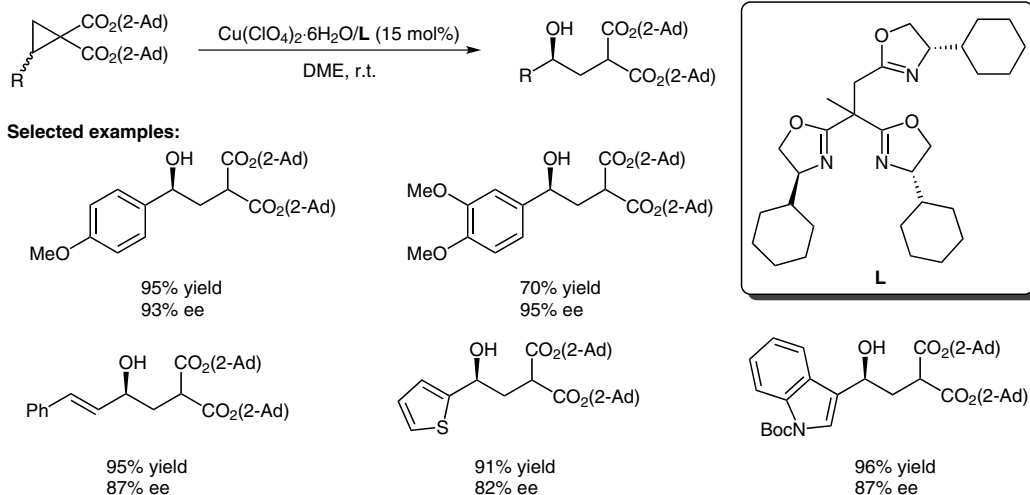
Category

Metal-Catalyzed
Asymmetric
Synthesis and
Stereoselective
Reactions

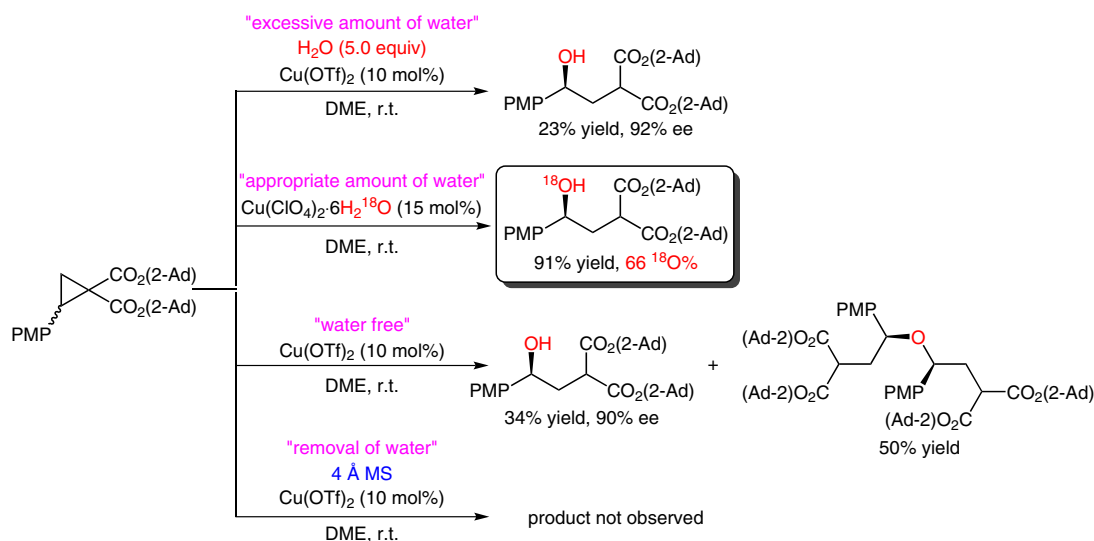
Key words

ring opening
cyclopropanes
copper
asymmetric
catalysis

Synfact
of the month



Effect of the water loading:



Significance: The authors report a copper-catalyzed enantioselective ring-opening reaction of donor–acceptor cyclopropanes with water. A variety of ring-opening products were obtained in high yields (≤96%) and enantioselectivities (≤95% ee).

SYNFACTS Contributors: Hisashi Yamamoto, Masahiro Sai
Synfacts 2016, 12(2), 0171 Published online: 19.01.2016
 DOI: 10.1055/s-0035-1561173; Reg-No.: H18015SF

Comment: In this reaction, the copper hydrate serves as both a Lewis acid and a source of water; this affords a system for the controlled release of the appropriate amount of water as a nucleophile in the asymmetric catalysis. The method provides a new and efficient approach for direct access to γ-substituted γ-hydroxybutyric acid derivatives.