Massachusetts Institute of Technology

Organic Chemistry 5.512

May 6, 2005
Prof. Rick L. Danheiser

Unit 10

Stereocontrolled Epoxidation

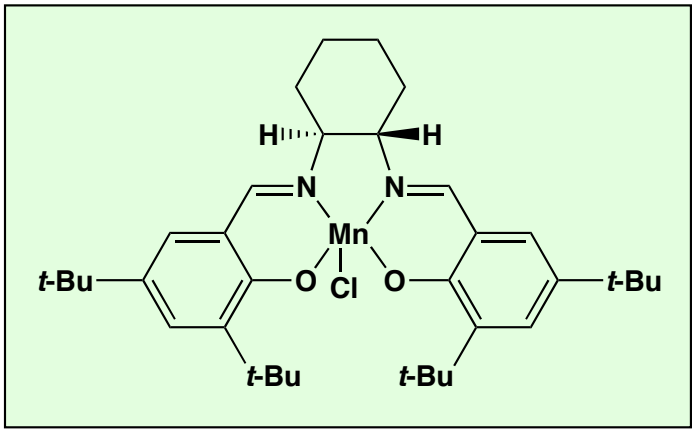
- ★ Substrate Control: 1,2-Asymmetric Induction
- ★ Reagent Control: Sharpless-Katsuki Asymmetric Epoxidation (AE)
- ★ Synthetic Elaboration of AE Products
- ★ Reagent Control: Jacobsen-Katsuki AE
- ★ Reagent Control: Shi AE

Reviews

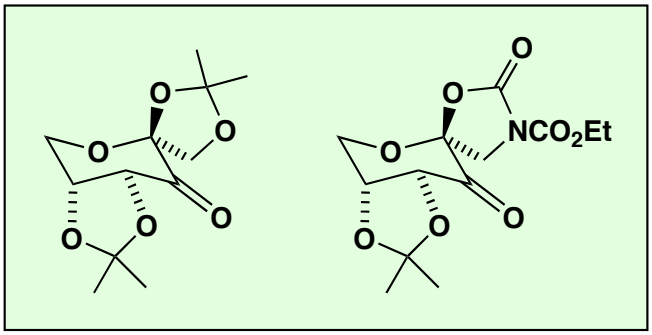
"Asymmetric Epoxidation of Unfunctionalized Olefins and Related Reactions" Katsuki, T. In *Catalytic Asymmetric Synthesis*; Ojima, I., Ed.; Wiley-VCH, 2000, pp 287-326.

"Asymmetric Catalysis of Epoxide Ring-Opening Reactions" Jacobsen, E. N. *Acc. Chem. Res.* **2000**, *33*, 421.

"Organocatalytic Asymmetric Epoxidation of Olefins by Chiral Ketones" Shi, Y. *Acc. Chem. Res.* **2004**, *37*, 488.

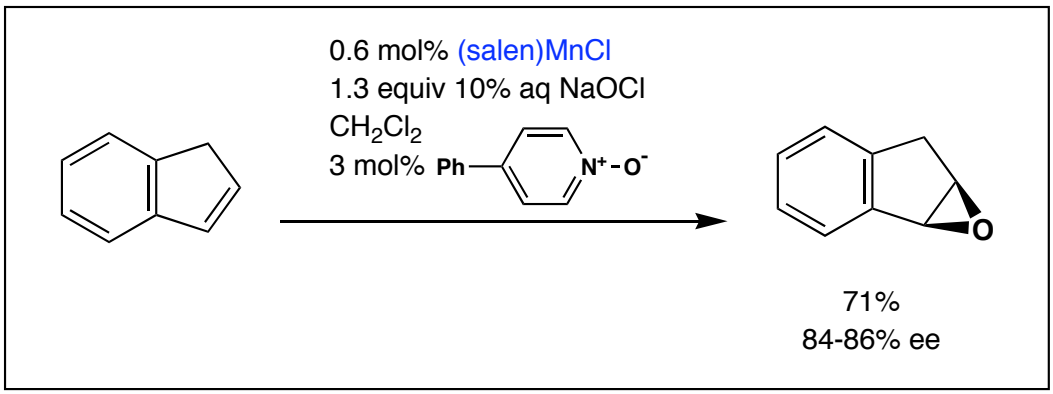


Jacobsen Manganese Salen Catalyst



Ketones for Shi Epoxidation

E. N. Jacobsen et al. *Organic Syntheses Coll Vol.* **10**, 29



Y. Shi et al. *Organic Syntheses* **80**, 9