

Massachusetts Institute of Technology
Organic Chemistry 5.512

May 8, 2006
Prof. Rick L. Danheiser

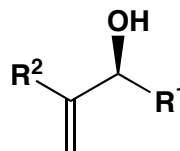
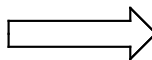
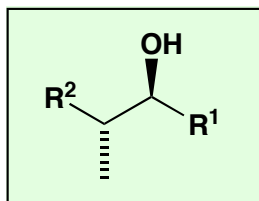
Unit 8
Stereocontrolled Reduction of Alkenes

- ★ Substrate Control: Directed Hydrogenation
- ★ Reagent Control Strategies

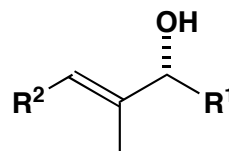
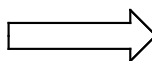
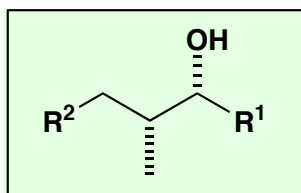
Substrate Control Strategies

Retrons

ANTI

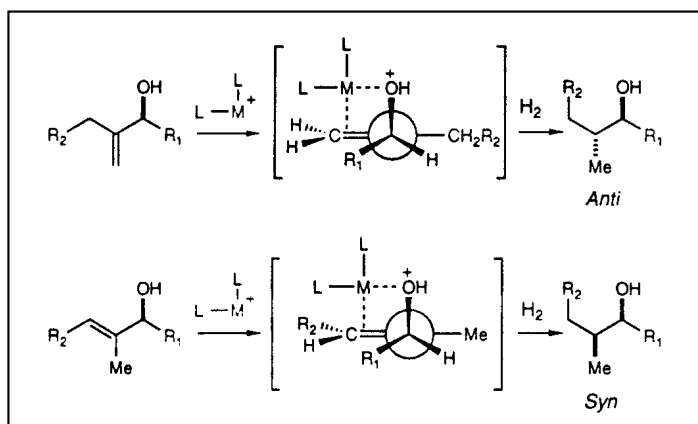


SYN



Reviewed in:

"Substrate-Directable Chemical
Reactions" Hoveyda, A.; Evans, D. A.;
Fu, G. C. *Chem. Rev.* **1993**, 93, 1307

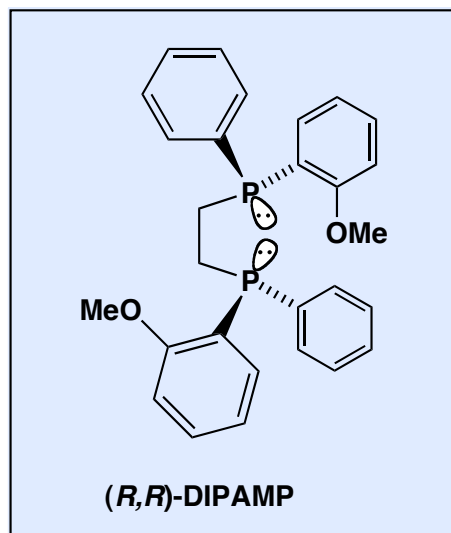


Reagent Control Strategies

(2) Catalytic Asymmetric Hydrogenation

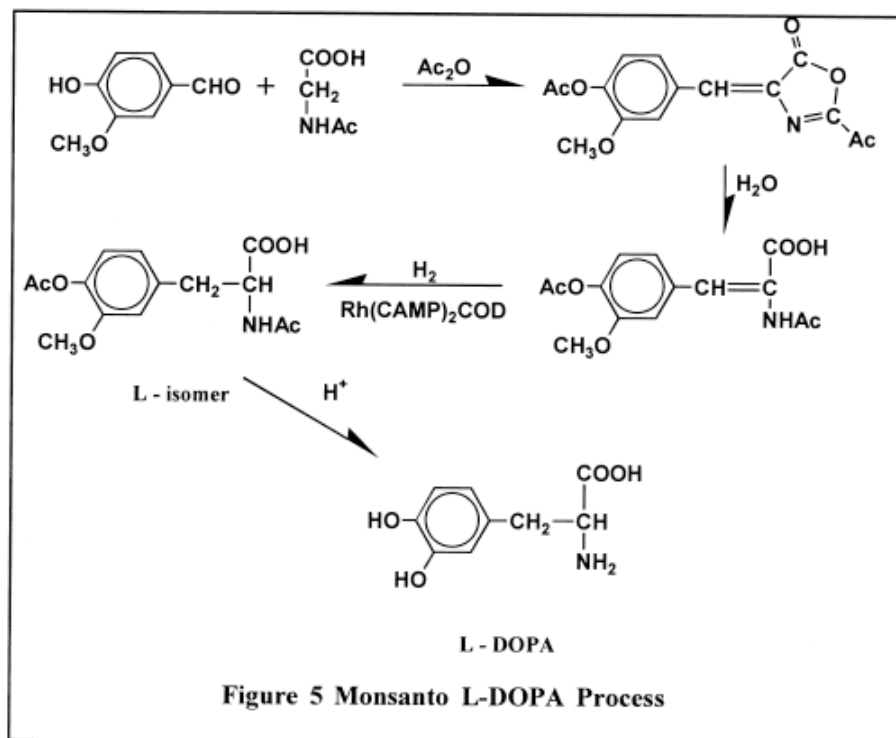


William S. Knowles
(with the King of Sweden)



Review on "Asymmetric Hydrogenation"

Ohkuma, T.; Kitamura, M.; Noyori, R.
In *Catalytic Asymmetric Synthesis*; Ojima, I., Ed.; Wiley-VCH, 2000, pp 1-110

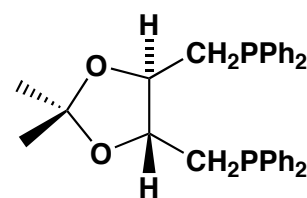


From the Nobel Lecture

W. S. Knowles, December 8, 2001



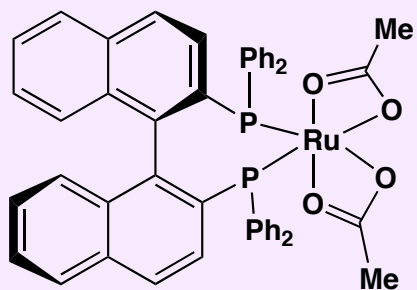
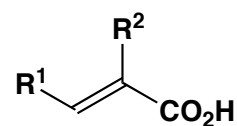
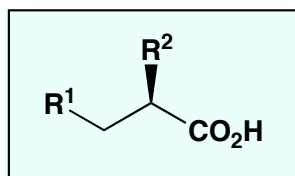
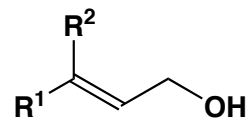
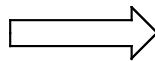
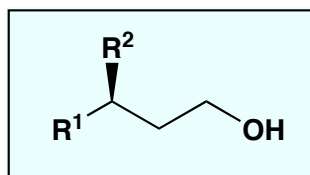
Henri Kagan



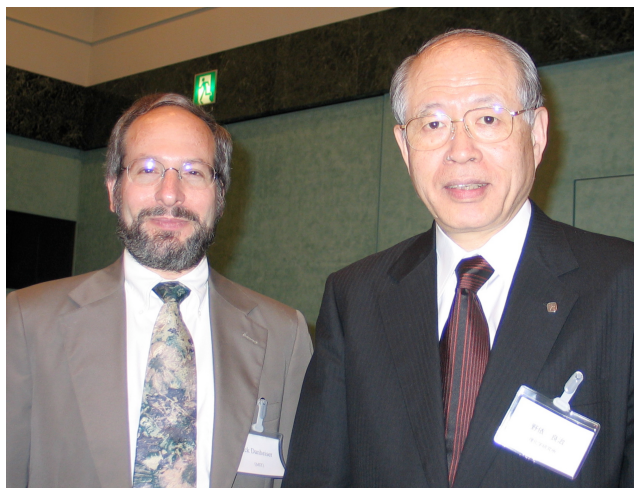
(R,R)-DIOP

Catalytic Asymmetric Hydrogenation

Representative
Retrons



Ru[(S)-BINAP]



Ryoji Noyori