

Massachusetts Institute of Technology
Organic Chemistry 5.512

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Unit 3
Stereocontrolled Conjugate Addition

- ★ Intrinsic Stereochemistry in the Michael Reaction
- ★ Substrate Control: Asymmetric Induction by Molecular Framework
- ★ Substrate Control: Asymmetric Induction via Chiral Auxiliaries
- ★ Catalytic Asymmetric Conjugate Addition I: *Unstabilized Nucleophiles*
- ★ Catalytic Asymmetric Conjugate Addition II: *Conjugate Reduction*
- ★ Catalytic Asymmetric Conjugate Addition III:
Stabilized Nucleophiles (Michael Additions)

Hayashi-Miyaura Rh-Catalyzed Conjugate Addition Reactions

Reviews

T. Hayashi et al. *Chem. Rev.* **2003**, *103*, 2829 and *Bull. Chem. Soc. Jpn.* **2004**, *77*, 13
Org. Synth. Coll. Vol. 10, 609

Recent variant using arylzinc compounds: *J. Am. Chem. Soc.* **2004**, *126*, 6240

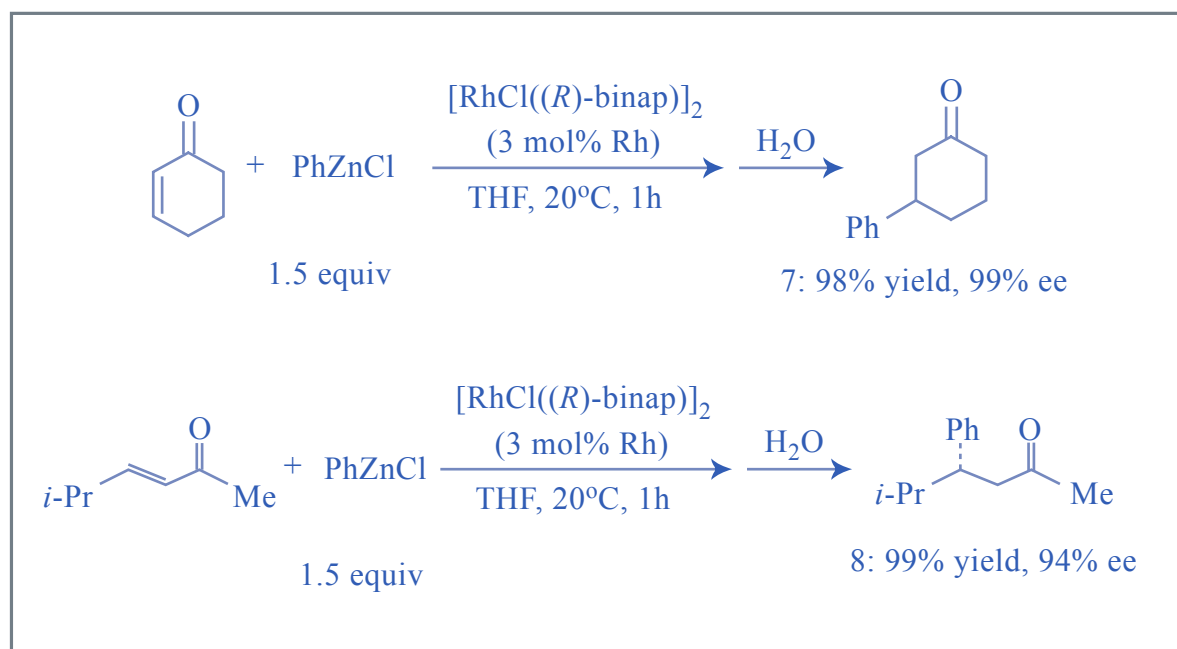


Figure by MIT OCW

Cu-Catalyzed Conjugate Addition of Organozinc Compounds

B. Feringa et al. In *Modern Organocopper Chemistry*; Krause, N., Ed.; Wiley-VCH, 2002, pp 224-258