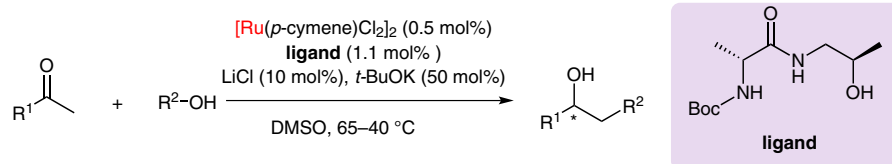
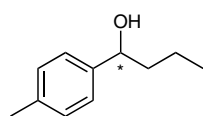


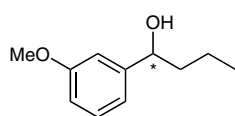
Tandem α -Alkylation–Asymmetric Transfer Hydrogenation of Acetophenones



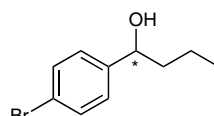
Selected examples:



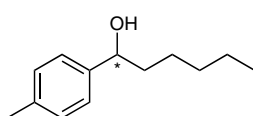
35% yield, 84% ee



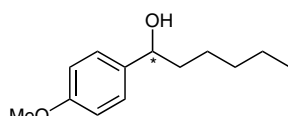
43% yield, 86% ee



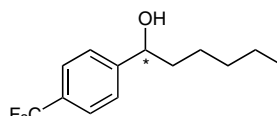
9% yield, 79% ee



34% yield, 88% ee

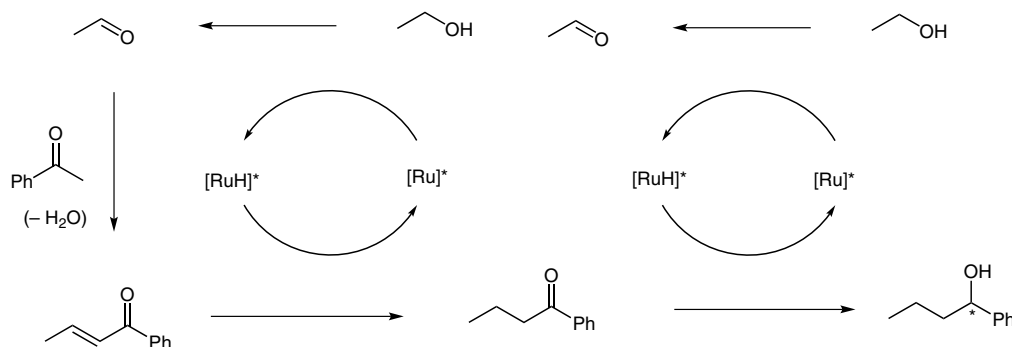


28% yield, 83% ee



19% yield, 57% ee

Proposed mechanism:



Significance: The authors present the first example of a direct formation of enantiomerically enriched secondary alcohols from ketones and primary alcohols by a tandem α -alkylation–asymmetric transfer hydrogenation process using $[\text{Ru}(p\text{-cymene})\text{Cl}_2]_2$ as catalyst in the presence of an amino acid hydroxy amide as ligand.

Comment: Diversely substituted acetophenones were successfully converted into chiral secondary alcohols via the borrowing hydrogen methodology in moderate yields and in moderate to good enantiomeric excess. In this process, primary alcohols served as both alkylating and reducing agents.