T. C. JOHNSON, W. G. TORRY, M. WILLS* (THE UNIVERSITY OF WARWICK, COVENTRY, UK)
Application of Ruthenium Complexes of Triazole-Containing Tridentate Ligands to Asymmetric Transfer
Hydrogenation of Ketones
Org. Lett. **2012**, *14*, 5230–5233.

Asymmetric Ruthenium-Catalyzed Transfer Hydrogenation of Ketones

Overall transformation:

Selected substrate scope:

Significance: Transition-metal-catalyzed asymmetric transfer hydrogenation (ATH) has become a leading reduction method, which can be credited to its broad scope and relatively mild conditions. Additionally, the development of more general methods to synthesize chiral secondary alcohol is a useful endeavor. Specifically, the ATH reduction of *ortho*-substituted aryl ketones is considered a more challenging transformation than that of related *meta*- and *para*-substituted substrates.

Comment: The authors report a ruthenium-catalyzed ATH of substituted aryl methyl ketones using a novel tridentate triazole containing ligand. The scope of this transformation is quite broad, and conversions and enantioselectivities range from moderate to excellent. Notably, tetralone and 4-chromanone can be reduced efficiently with synthetically useful enantioselectivity. The reduction of cyclohexyl methyl ketone proceeds with excellent conversion, yet enantioselectivity remains low (13% ee).

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