B. M. TROST,* T. SAGET, C.-I. HUNG (STANFORD UNIVERSITY, USA)

Direct Catalytic Asymmetric Mannich Reactions for the Construction of Quaternary Carbon Stereocenters *J. Am. Chem. Soc.* **2016**, *138*, 3659–3662.

Zinc-Catalyzed Asymmetric Mannich Reaction Forming β-Amino Ketones

Significance: The asymmetric formation of all-carbon quaternary stereocenters in an efficient and atom economical manner has been of interest for decades. Trost and co-workers are able to display a highly asymmetric Mannich reaction forming β -amino ketones bearing a quaternary carbon stereocenter, utilizing the Zn-ProPhenol catalytic system previously prepared in the group.

Comment: The zinc-catalyzed Mannich reaction forming β -amino ketones proceeded in excellent yield, diastereo- and enantioselctivity. The reaction tolerated a wide range of functional groups including heteroaromatics, seven-membered rings, and sterically encumbered imines. The two-point binding of the Boc-imine to the catalyst, as seen in the proposed transition state, explains the stereochemical outcome of the reaction.

 SYNFACTS Contributors: Mark Lautens, Hyung Yoon

 Synfacts 2016, 12(5), 0479
 Published online: 18.04.2016

 DOI: 10.1055/s-0035-1562059; Reg-No.: L04016SF

Metal-Catalyzed Asymmetric Synthesis and Stereoselective Reactions

Key words

zinc

Mannich reaction

 α -branched ketones



479