G. JIANG, B. LIST* (MAX-PLANCK-INSTITUT FÜR KOHLENFORSCHUNG, MÜLHEIM AN DER RUHR, GERMANY)

Direct Asymmetric α -Allylation of Aldehydes with Simple Allylic Alcohols Enabled by the Concerted Action of Three Different Catalysts

Angew. Chem. Int. Ed. 2011, 50, 9471-9474.

Asymmetric α -Allylation of Aldehydes with Simple Allylic Alcohols

Proposed mechanism:

Significance: List and co-workers developed an enantioselective direct α -allylation of α -branched aldehydes with allylic alcohols generating products with all-carbon quaternary stereogenic centers in high yields and excellent enantioselectivities. The general reaction scale for this transformation is 0.2 mmol.

Comment: It is suggested that the high enantioselectivity for the described transformation arises from an asymmetric counteranion-directed catalysis (ACDC) complex – three different catalytic species are involved: $[Pd(PPh_3)_4]$, the chiral Brønsted acid TRIP, and benzhydrylamine.

SYNFACTS Contributors: Mark Lautens, Patrick T. Franke
Synfacts 2011, 12, 1313-1313 Published online: 18.11.2011
DOI: 10.1055/s-0031-1289360; Reg-No.: L13211SF