Nickel(0)-Catalyzed Hydroalkylation of 1,3-Dienes with Simple Ketones

Nickel-Catalyzed Enantioselective Hydroalkylation of 1,3-Dienes

Significance: Transition-metal-catalyzed asymmetric addition of enols or enolates to unsaturated hydrocarbons remains an unanswered challenge. The authors have developed a regio- and stereo-selective hydroalkylation of 1,3-dienes by nickel catalysis.

Comment: This catalytic reaction provides a wide range of γ,δ-unsaturated ketones or esters in good yields and with high enantioselectivities. One product was easily converted into the nonsteroidal anti-inflammatory drug (R)-flobufen, which also exhibits immunomodulatory properties.

Selected examples:

Derivatization:

SYNFACTS Contributors: Hisashi Yamamoto, Wataru Muramatsu
Synfacts 2018, 14(12), 1257 Published online: 19.11.2018 DOI: 10.1055/s-0037-16110111; Reg-No.: H14818SF