

T. QIN, J. CORNELLA, C. LI, L. R. MALINS, J. T. EDWARDS, S. KAWAMURA, B. D. MAXWELL, M. D. EASTGATE, P. S. BARAN* (THE SCRIPPS RESEARCH INSTITUTE, LA JOLLA BRISTOL-MYERS SQUIBB, PRINCETON AND NEW BRUNSWICK, USA)
 A General Alkyl–Alkyl Cross-Coupling Enabled by Redox-Active Esters and Alkylzinc Reagents
Science **2016**, *352*, 801–805.

Nickel-Catalyzed Decarboxylative Alkyl–Alkyl Cross-Coupling

Category

Metal-Mediated Synthesis

Key words

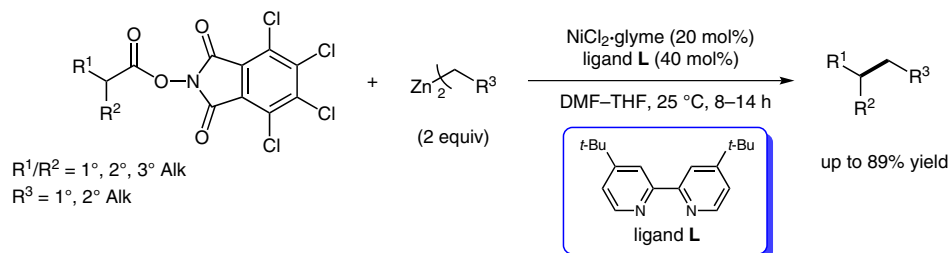
alkylzinc

decarboxylative cross-coupling

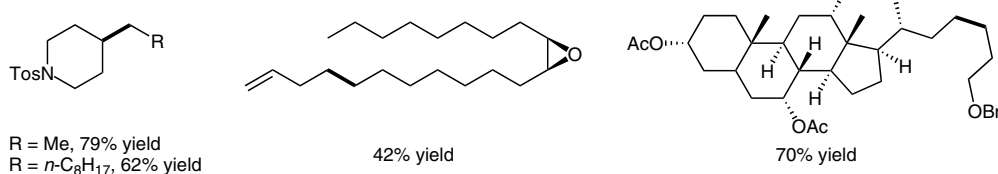
nickel

Synfact
of the month

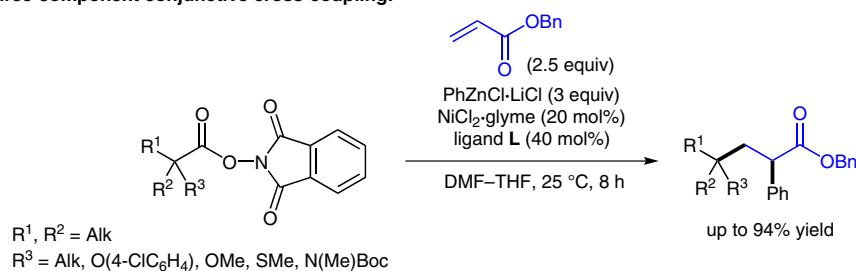
Decarboxylative alkyl–alkyl cross-coupling:



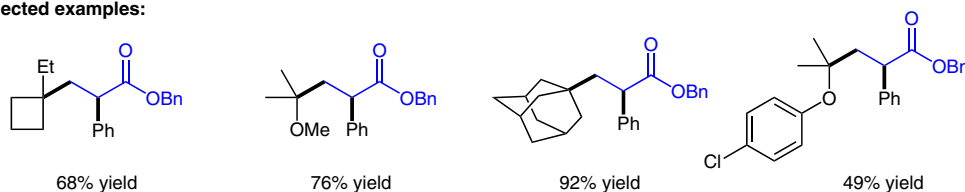
Selected examples:



Three-component conjunctive cross-coupling:



Selected examples:



Significance: Baran and co-workers report a nickel-catalyzed decarboxylative cross-coupling of redox-active alkyl esters with dialkylzinc reagents by using a bipyridine ligand to afford a variety of products in very high yields. Remarkable are the high functional group tolerances as well as the mild reaction conditions.

Comment: The authors present a three-component conjunctive cross-coupling by employing benzylacrylate as an acceptor molecule. The formation of quaternary centers is accomplished by the formation of two C–C bonds and the corresponding products are obtained in very high yields.

SYNFACTS Contributors: Paul Knochel, Diana Haas
 Synfacts 2016, 12(07), 0723 Published online: 17.06.2016
 DOI: 10.1055/s-0035-1562328; Reg-No.: P07416SF