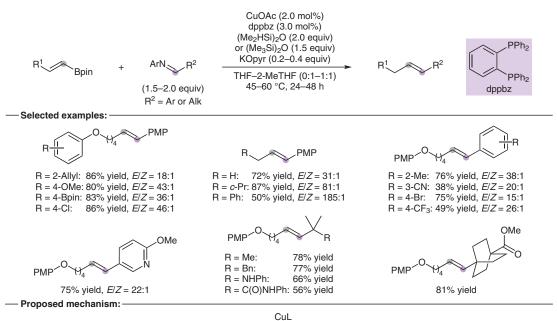
J. E. BAUMANN, C. P. CHUNG, G. LALIC* (UNIVERSITY OF WASHINGTON, SEATTLE, USA) Stereoselective Copper-Catalyzed Olefination of Imines

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Wittig-Type E-Selective Olefination of Imines with Vinyl Boronate Esters Under Copper Hydride Catalysis



Bpin
$$ArN$$
 R^2

LCuH Si -H R^1 R^2

Spin N -CuL R^1 R^2 R^2

Significance: Lalic and co-workers report a novel copper hydride-catalyzed protocol for the stereoselective Wittig-type olefination of imines with vinyl boronate esters. This versatile strategy features broad functional-group compatibility and tolerates both aryl and alkyl imines, providing the corresponding alkenes with high *E*-selectivities.

Comment: Mechanistic investigations including control experiments and NMR studies support the shown catalytic cycle. The reaction's success relies on the heterobimetallic intermediate, which serves as an ylide equivalent. The high *E*-selectivity is based on the stereoselective addition of that intermediate to the imine, followed by a stereospecific *anti*-elimination.

SYNFACTS Contributors: Martin Oestreich, Hendrik F. T. Klare, Nektarios Kranidiotis-Hisatomi Synfacts 2024, 20(03), 0257 Published online: 14.02.2024 DOI: 10.1055/s-0043-1773048; Reg-No.: M02724SF

Metals in Synthesis

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alkenes

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olefination

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