

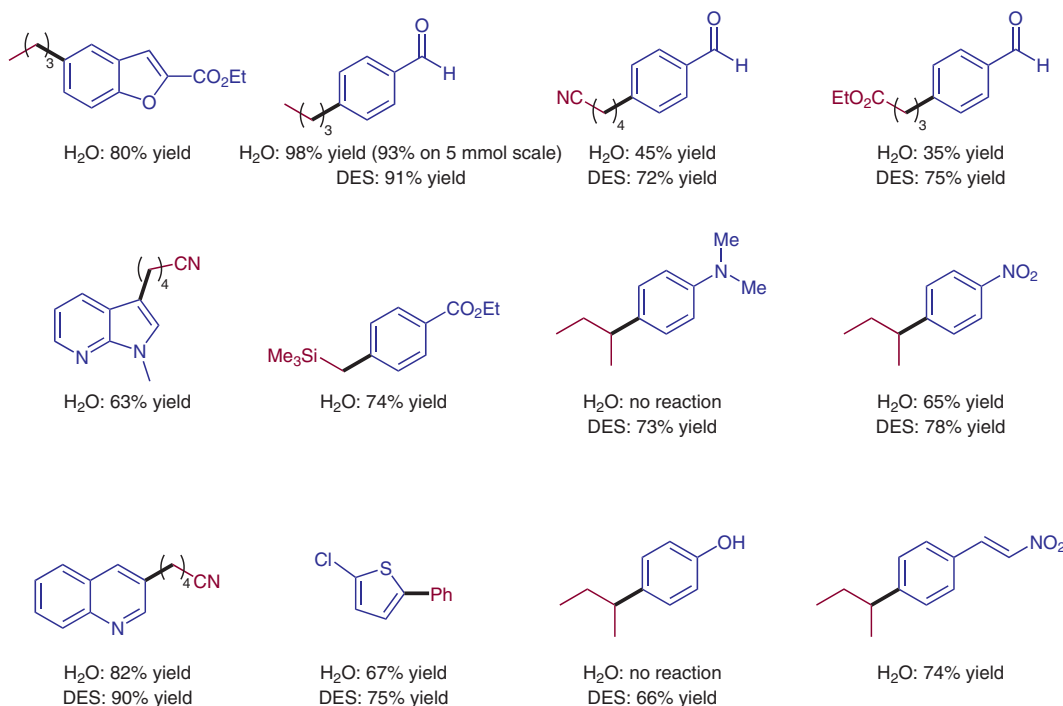
G. DILAURO, C. S. AZZOLLINI, P. VITALE, A. SALOMONE, F. M. PERNA*, V. CAPRIATI*
(UNIVERSITÀ DI BARI "ALDO MORO", ITALY)

Scalable Negishi Coupling between Organozinc Compounds and (Hetero)Aryl Bromides under Aerobic Conditions when using Bulk Water or Deep Eutectic Solvents with no Additional Ligands
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Negishi Cross-Couplings in Water and Deep Eutectic Solvents



Selected examples:



Significance: Capriati, Perna, and co-workers report the efficient Pd-catalyzed cross-coupling of aryl bromides with a broad range of functionalized organozinc reagents in water containing NaCl or choline chloride/urea eutectic mixture [deep eutectic solvents (DES)] as reaction medium. The method chemoselectively affords the functionalized (hetero)aryl compounds in good to excellent yields under very mild reaction conditions without the use of any additional ligand. This protocol proved to be scalable by performing the reaction at a 5 mmol scale without a loss of yield.

Comment: The authors demonstrated the practicability of their method by recycling the Pd catalyst and the DES. The catalyst remained active for seven cycles with a drop of up to 29% yield at the end of the seventh cycle. However, the catalyst retained good catalytic activity until the end of the fourth cycle. This procedure allows the use of well-studied organometallic reactions in environmentally friendly solvent mixtures and can be of great interest for industrial applications.

SYNFACTS Contributors: Paul Knochel, Alexander Kremsmair
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