G. A. MOLANDER,* D. E. PETRILLO (UNIVERSITY OF PENNSYLVANIA, PHILADELPHIA, USA)

Suzuki–Miyaura Cross-Coupling of Potassium Trifluoroboratohomoenolates
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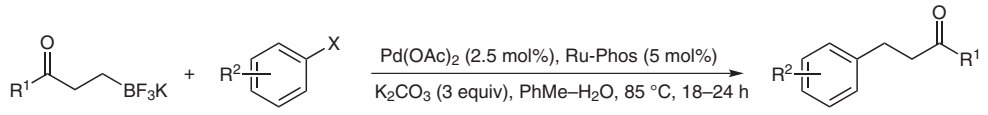
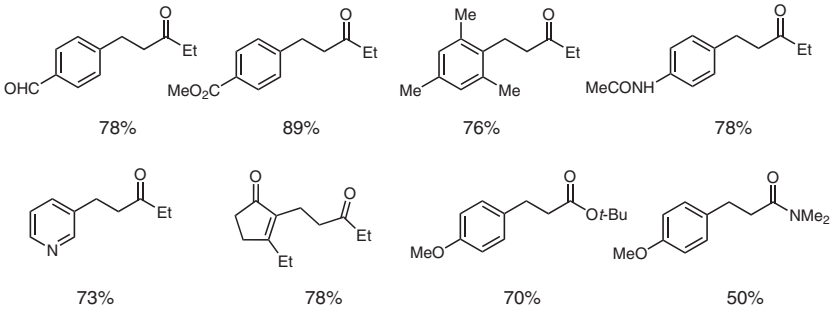
Suzuki–Miyaura Cross-Coupling of Trifluoroboratohomoenolates



R^1 = Et, OMe, O*t*-Bu, NMe_2
X = Cl, Br, OTf

R^2 = 4-NO_2, 4-CHO, 3-COMe, 3-CN, etc.

Ru-Phos = 2-dicyclohexylphosphino-2',6'-diisopropoxy-1,1'-biphenyl



Significance: The application of the corresponding alkyltrifluoroborates as nucleophiles in a cross-coupling reaction with aryl and alkenyl halides or triflates allowed a simple preparation of various 2-arylethyl ketones, amides and esters. The method tolerates a broad variety of functional groups, and, due to its simplicity and excellent versatility, can be very useful in combinatorial synthesis and creation of compound libraries.

Comment: The trifluoroboratoenolates were prepared via the Cu(I)-catalyzed conjugate addition of bis(pinacolato)diboron to unsaturated carbonyl compounds (S. Mun, J.-E. Lee, J. Yun *Org. Lett.* **2006**, *8*, 4887), followed by the treatment with KHF_2. Another variant is the C-alkylation of enolates with iodomethylpinacol boronate (A. Whiting *Tetrahedron Lett.* **1991**, *32*, 1503). Most alkyltrifluoroborates are known to be very convenient to handle, stable free-flowing powders.

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Metal-Mediated Synthesis

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cross-coupling
homoenolates