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Ir-Catalyzed Preparation of SF_5-Substituted Potassium Aryl Trifluoroborates via C–H Borylation and Their Application in the Suzuki–Miyaura Reaction
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Category

Metal-Mediated Synthesis

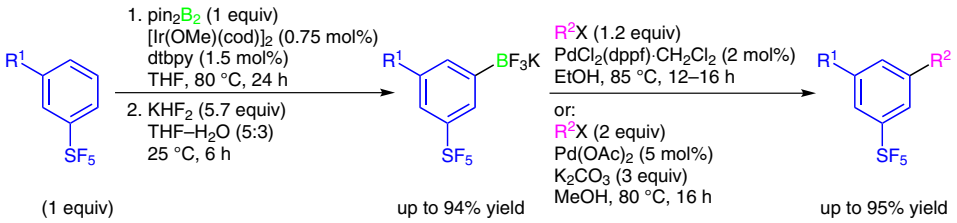
Key words

C–H borylation

potassium aryl trifluoroborates

iridium

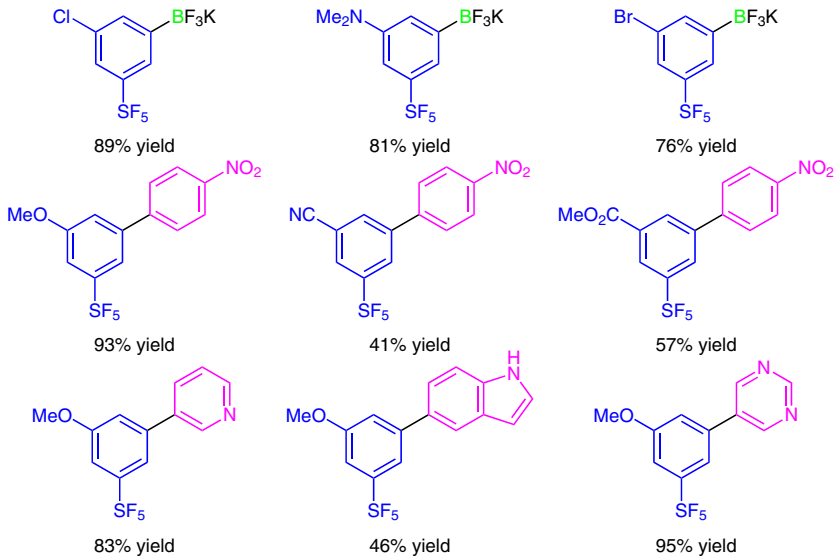
Iridium-Catalyzed Preparation of SF_5-Substituted Aryl Trifluoroborates



(1 equiv) — up to 94% yield — up to 95% yield

R^1 = OMe, CN, CO_2Me, NMe_2, Cl, Br, I
R^2 = Ar
X = Br, I
dtbpy = 4,4'-di-*tert*-butyl-2,2'-dipyridyl
dppf = 1,1'-bis(diphenylphosphino)ferrocene

Selected examples:



Significance: A novel method for the preparation of pentafluorosulfanyl-substituted potassium aryltrifluoroborates via iridium-catalyzed C–H borylation is reported. The corresponding products were obtained in high yields and have been submitted to Suzuki–Miyaura cross-couplings furnishing 3,5-disubstituted pentafluorosulfanylbenzenes.

Comment: The described protocol is very versatile since the prepared compounds are potential important building blocks for drug discovery and agrochemicals. Moreover, the reaction proceeds under relatively mild conditions and tolerates various functional groups.

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