Fe-Catalyzed Cross-Coupling of Alkyl Halides with Alkynyl Grignard Reagents

Significance: The authors report a novel coupling of primary and secondary alkyl halides with alkynylmagnesium reagents with iron catalysis. The use of a bisphosphine ligand bearing peripheral steric bulk as well as slow addition of the Grignard reagent suppress undesired side reactions.

Comment: By using starting materials with two potential reactive sites, for example C(sp^3)-Br and C(sp^3)-OTf, and applying the reported iron-catalyzed cross-coupling with an alkynyl Grignard reagent, the C(sp)-C(sp^3)-coupled products are obtained in excellent yields.

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