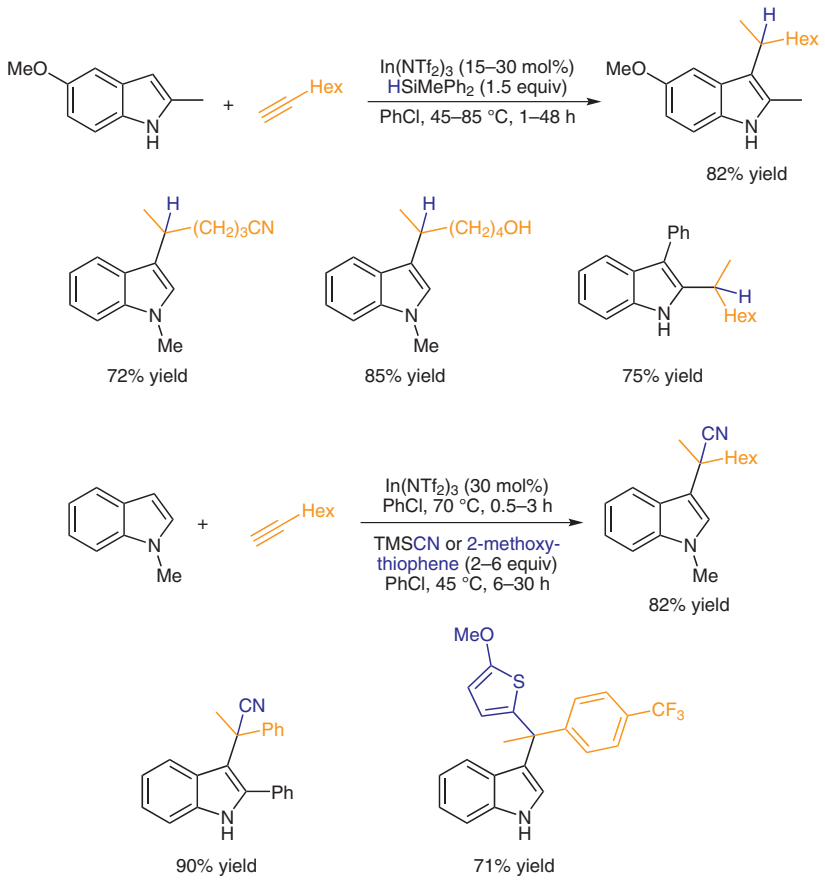
T. TSUCHIMOTO,* M. KANBARA (MEIJI UNIVERSITY, KAWASAKI, JAPAN)
Reductive Alkylation of Indoles with Alkynes and Hydrosilanes under Indium Catalysis
Org. Lett. **2011**, *13*, 912-915.

Indium-Catalyzed Reductive Alkylation of Indoles



Significance: Herein, an indium-catalyzed reductive alkylation of indoles is reported. The protocol tolerates a broad scope of functional groups and allows a flexible combination of indoles and alkynes affording alkylindoles in good yields. The preferred nucleophiles are hydrosilanes; however, carbon nucleophiles, such as trimethylsilyl cyanide or methoxythiophene, can also be used.

Comment: Depending on the structure of the substrate, the authors suggest two different reaction mechanisms. For 2-substituted indoles, the first step is a single addition to the indium-activated alkyne followed by hydride reduction and regeneration of the catalyst. Unsubstituted indoles undergo a double addition to the alkyne resulting in diindolylalkanes before indium elimination and hydride transfer occurs.

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Synfacts 2011, 5, 0535-0535 Published online: 15.04.2011
DOI: 10.1055/s-0030-1259775; **Reg-No.:** P03411SF