A. M. WHITTAKER, G. LALIC* (UNIVERSITY OF WASHINGTON, SEATTLE, USA) Monophasic Catalytic System for the Selective Semireduction of Alkynes *Org. Lett.* **2013**, *15*, 1112–1115.

Catalytic Semireduction of Alkynes to Alkenes

up to 98% yield

 R^1 , R^2 = Alk, alkenyl residues R^3 = i-Bu, t-Bu

Selected examples:

Significance: A novel copper-catalyzed semireduction of alkynes to alkenes has been disclosed. 0.5 to 2 mol% of a copper catalyst in combination with polymethylhydrosiloxane and isobutyl alcohol efficiently reduced terminal and internal alkynes, even in the presence of nitro and iodo groups.

Comment: The authors propose the following mechanism: the silane transfers its hydride to the copper catalyst and a subsequent hydrocupration of the alkyne takes place. Protonation of this alkenyl-copper intermediate by the alcohol forms a copper alkoxide and the desired product.

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Category

Metal-Mediated Synthesis

Key words

copper

polymethylhydrosiloxane

alkynes

