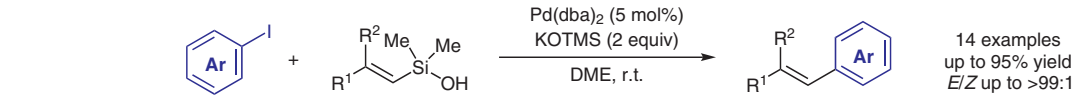
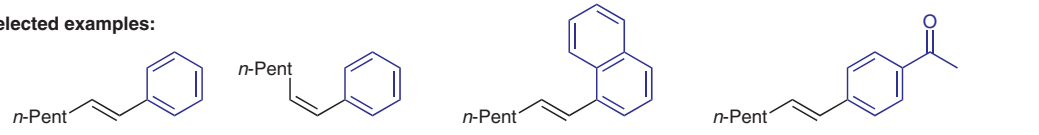
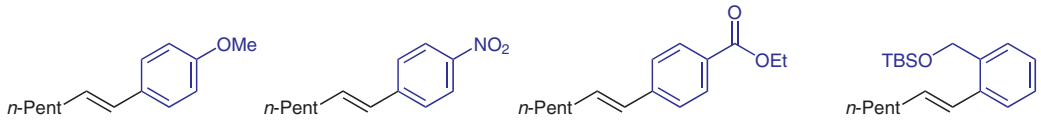
S. E. DENMARK*, R. F. SWEIS (UNIVERSITY OF ILLINOIS, URBANA, USA)
Fluoride-Free Cross-Coupling of Organosilanols
J. Am. Chem. Soc. **2001**, *123*, 6439–6440.

The Hiyama–Denmark Cross-Coupling

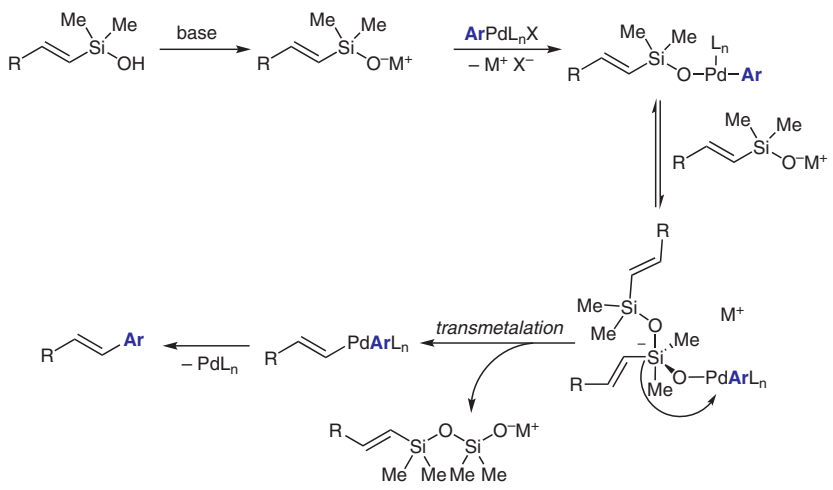


Selected examples:





Proposed mechanism:



Significance: The authors reported a fluoride-free palladium-catalyzed cross-coupling of organosilanols with iodoarenes. Previous conditions for palladium-catalyzed cross-coupling of organosilanes required high temperatures and long reaction times.

Review: S. E. Denmark, R. F. Sweis *Acc. Chem. Res.* **2002**, *35*, 835–846.

Comment: Various iodoarenes reacted with an organosilanol to provide the cross-coupled products in high yields. The authors propose that a second molecule of silyloxide binds to the arylpalladium silyloxide to generate a pentacoordinate silicon intermediate, which can undergo a facile transmetalation.

SYNFACTS Contributors: Mark Lautens, José F. Rodríguez
Synfacts 2019, 15(11), 1285 Published online: 18.10.2019
DOI: 10.1055/s-0039-1690327; **Reg-No.:** L13519SF

Category
Metals in Synthesis

Key words
palladium catalysis
organosilanols
cross-coupling