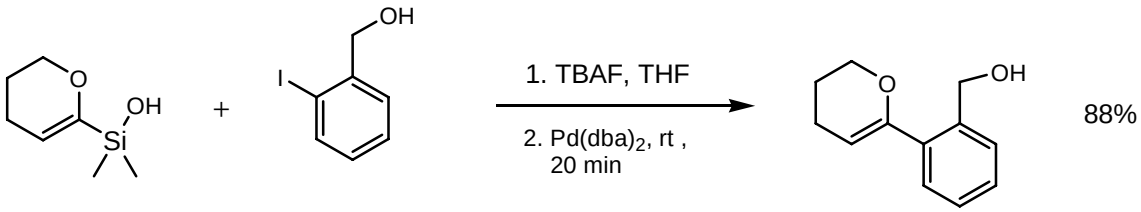
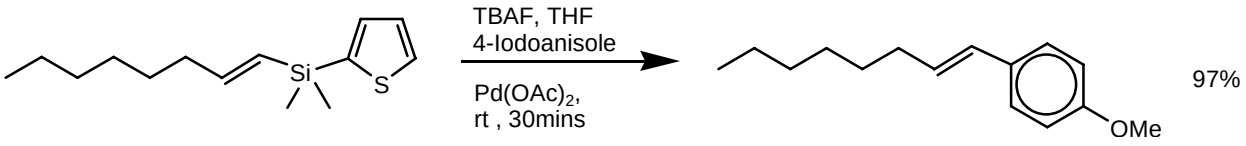
HIYAMA CROSS-COUPLING REACTIONS

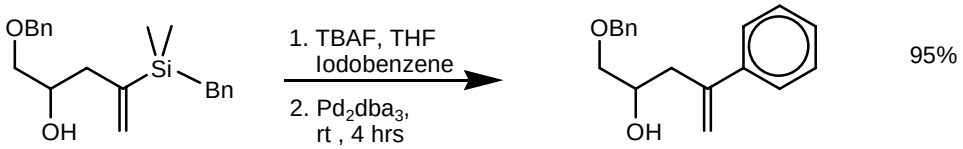
The palladium-catalysed reaction between organohalides and organosilicons is generally known as the Hiyama Cross-coupling Reaction. [1] The reaction is similar to the well known Suzuki-Miyaura Cross-coupling Reaction.

Dimethylsilanols and their salts are excellent cross-coupling partners which can provide the desired products under mild conditions and in high yields. [2]

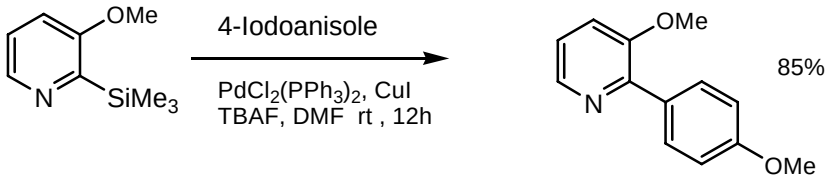


Recently, safety-catch silanols have been developed which are stable under a range of reaction conditions, are stable to moisture and chromatography but which can be activated *in situ* to give the desired reactive silanols. Examples of safety-catch silanols include 2-pyridyldimethylsilanes, 2-thienyldimethylsilanes and benzyldimethylsilanes. [3]





Substituted pyridyl-2-trimethylsilanes have also recently been found to be competent cross coupling partners. [4]



References

(1) Hatanaka, Y.; Hiyama, T. *Pure Appl. Chem.*, 1994, *66*, 1471.
(2) Denmark, S.; Baird, J. *Chem. Eur. J.*, 2006, *12*, 4954-4963.
(3) Spivey, A.; Gripton, C.; Hannah, J. *Curr. Org. Syn.*, 2004, *1*, 211-226.
(4) Pierrat, P.; Gros, P.; Fort, Y. *Org. Lett.*, 2005, *7*, 697-700.

For a full listing of reagents for Hiyama cross-couplings, visit www.amtechpl.com.

V1.0 First Produced: 22 March 2007
V1.1 This version: 17 April 2007