**Category**

**Polymer-Supported Synthesis**

**Key words**

**gold nanoparticles**

**titanium dioxide**

**1,2-disilanes**

**alcohols**

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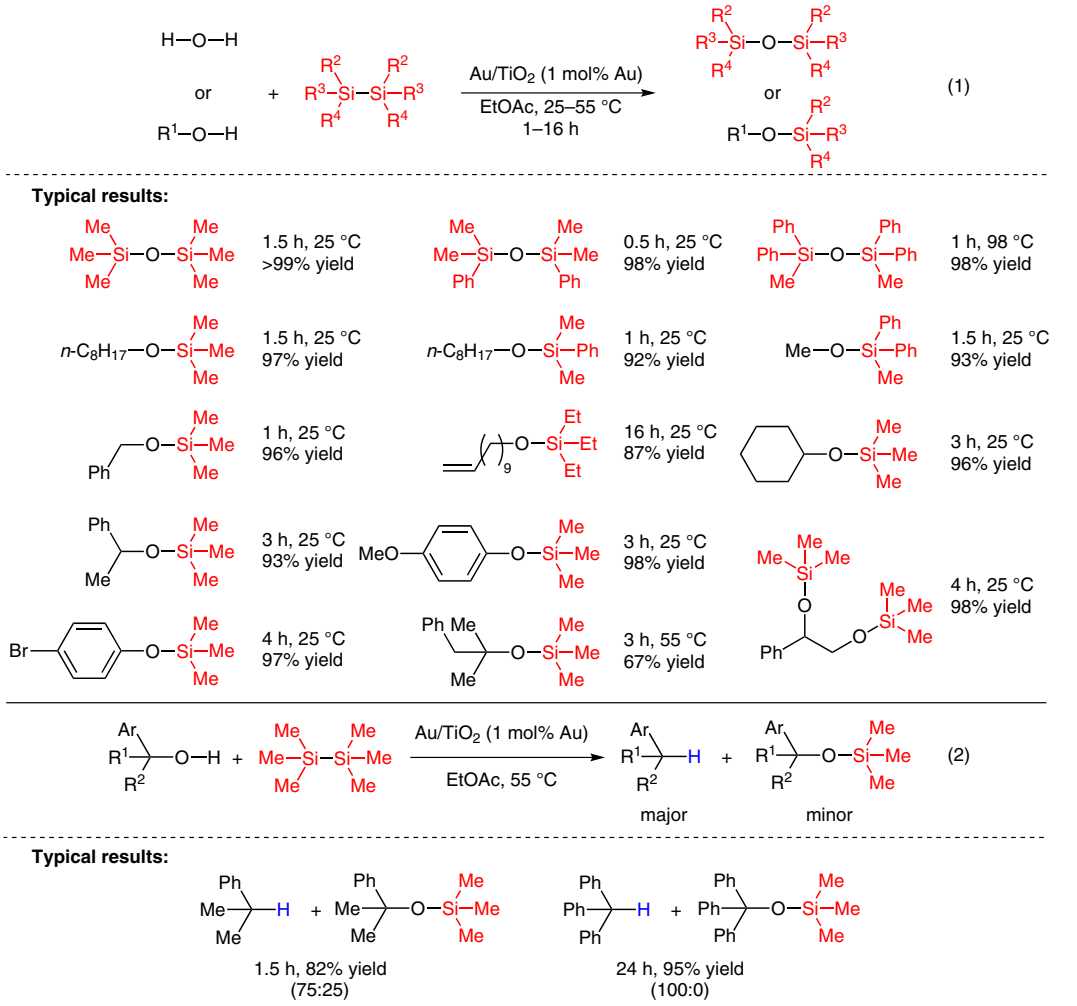
Gold Nanoparticles-Catalyzed Activation of 1,2-Disilanes: Hydrolysis, Silyl Protection of Alcohols and Reduction of *tert*-Benzylic Alcohols

*Chem. Commun.* **2012**, *48*, 10751–10753.

# Silylation of Alcohol Derivatives with 1,2-Disilanes Catalyzed by $Au/TiO_2$




**Significance:** Gold nanoparticles supported on titanium dioxide ($Au/TiO_2$) catalyzed the silylation of water and primary, secondary, and tertiary aliphatic alcohols with 1,2-disilanes via Si–Si bond cleavage to give the corresponding silyl ethers in up to >99% yield (eq. 1). When tertiary benzylic alcohols were used for the reaction, the reduction proceeded to afford the corresponding alkanes as the major products (eq. 2).

**Comment:** The authors previously reported the oxidative cycloaddition of 1,1,3,3-tetramethyldisiloxane to alkynes catalyzed by $Au/TiO_2$ (*J. Am. Chem. Soc.* **2011**, *133*, 10426). The catalytic activity of $Au/TiO_2$ for the silylation of water was superior to that of gold nanoparticles supported on other supports such as aluminum oxide ($Al_2O_3$) and zinc oxide (ZnO).

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Synfacts 2013, 9(1), 0112 Published online: 17.12.2012
**DOI:** 10.1055/s-0032-1317908; **Reg-No.:** Y13612SF