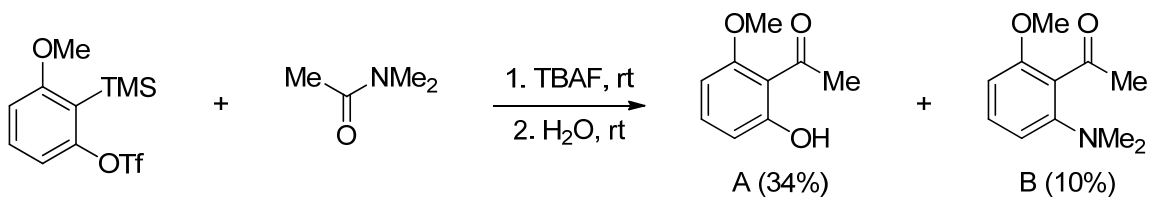


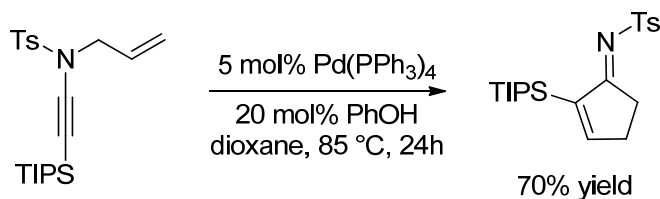
MSV Problem Set - Meyers

4-6-10

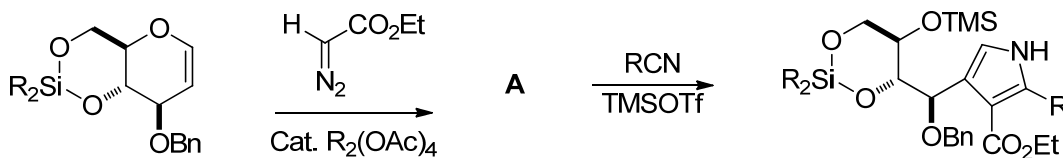
1. Provide a mechanism for the reaction below and give an explanation as to why the product yields are observed as they are. This reaction was conducted in DMA, rather than DMF which afforded different products (*Org. Lett.* ASAP).



2. The following reaction involves a number of fascinating mechanistic steps, one of which is quite unusual. Provide a step-wise mechanism for the reaction starting from the *N*-allylynamide (*Org. Lett.* ASAP).



3. Pagenkopf and Yu have reported a new “diversity-oriented” synthesis of pyrroles (*Org. Lett.* **2003**, 5, 5099). The two-step process illustrated below will accommodate a range of “R” substituents.



Provide a mechanism for the overall process and clearly identify intermediate A.

4. Provide a mechanism for the reaction below (*Tetrahedron*, **1999**, 55, 13369).

