

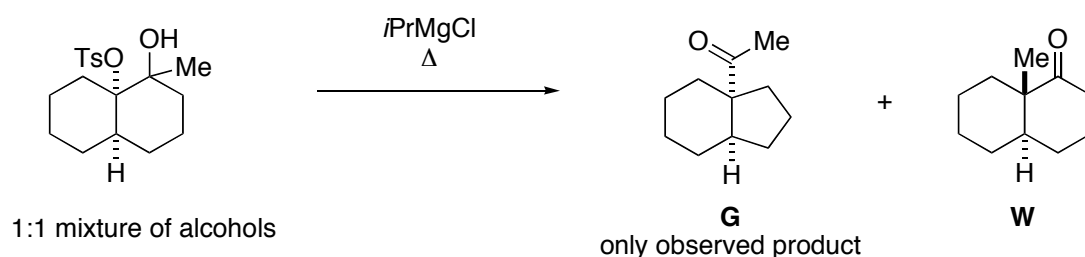


Princeton University Mechanisms Club  
Friday, August 31, 2007  
Grace Wang, moderator

Themes: Three-Dimensional Drawings and OOMFCPOAT<sup>1</sup>

Question 1

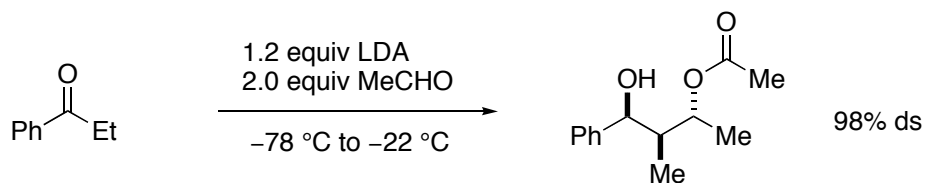
A) Provide a mechanism for the formation of **G** from the 1:1 mixture of alcohols.



B) Rationalize why **W** is not observed.

Question 2

In a paper by Woerpel and coworkers (*JOC*, **1997**, 62, 5674-5), tandem aldol-Tischenko reactions are used to diastereoselectively synthesize diols and triols. Rationalize the diastereoselectivity of the reaction below.

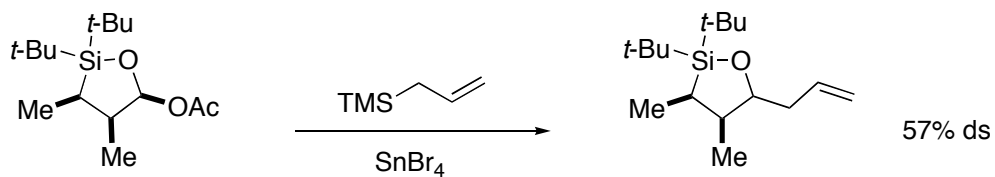
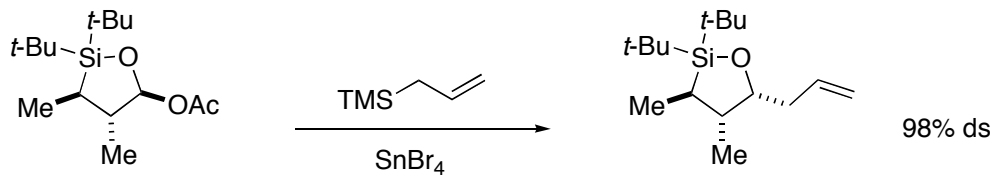


<sup>1</sup> One Of My Favorite Chemistry Professors Of All Time.

### Question 3

Woerpel and coworkers (*JOC*, **2002**, *67*, 2056-64) have extensively examined diastereoselective nucleophilic substitution reactions of oxasilacyclopentane acetals. Rationalize the observed selectivities.

A) 2,3-*cis* Me vs. 2,3-*trans* Me



B) Different nucleophiles

