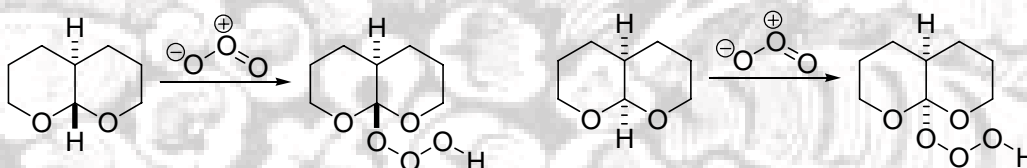


GROUP MEETING

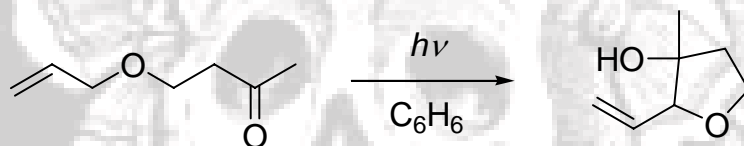
November 1st, 2006

1. The oxidation of acetals by electrophilic ozone is known to be sensitive to structure. Two striking examples of different reactivity are detailed in the question below. Using clear three-dimensional drawings provide a rationale for the observation that rigid glycoside **A** readily undergoes oxidation but glycoside **B** does not. Be sure to indicate all relevant stereoelectronic interactions.



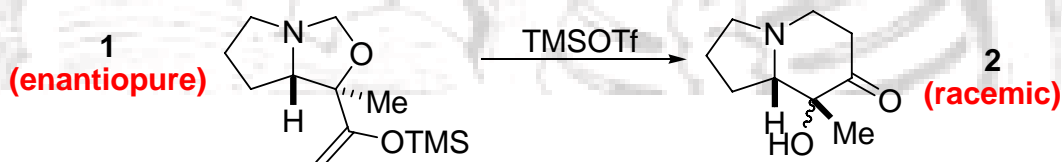
Deslongchamps *Can.J.Chem.* **1974**, 3651-3664.

2. Provide a mechanism for the following reaction:



Carless, H.A.J. and Haywood, D.J. *J.Chem.Soc., Chem.Comm.* **1980**, 18, 657-658.

3. During the course of the Overman synthesis of pumilotoxin the indicated transformation was carried out with the expectation that the bicyclic ketone **2** would be enantiopure since the starting amine **1** was enantiomerically pure. Surprisingly, product **2** was obtained as a racemate.



J.Org.Chem. **1992**, 57, 1179.

Provide a mechanism for this transformation that accounts for the illustrated stereochemical outcome.