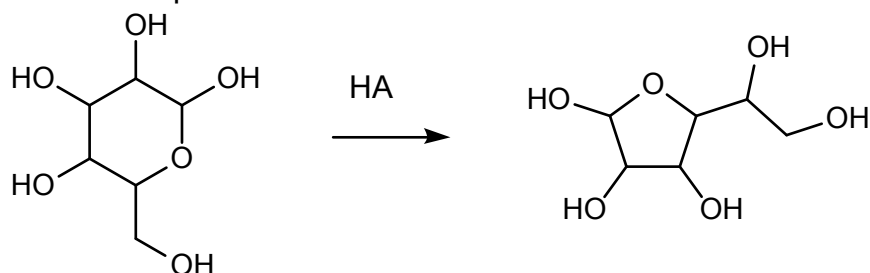


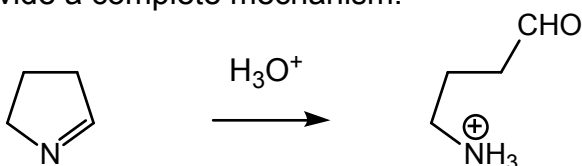
Acetal Mechanism Practice Problems

See also Klein (3rd ed.) problems 8, 12, 14, 19, 55, 63

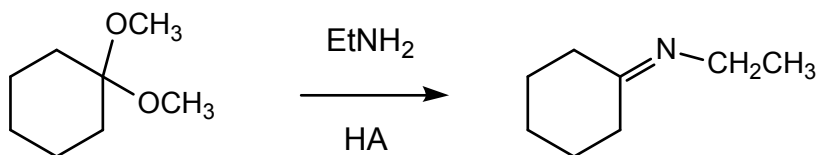
1. Provide a complete mechanism.



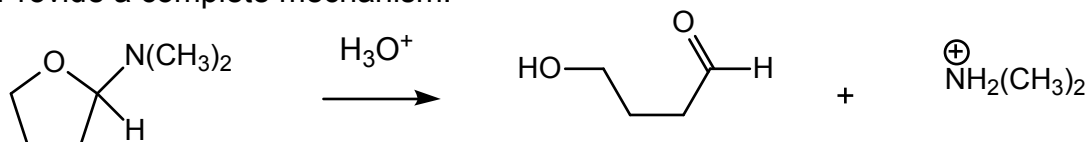
2. Provide a complete mechanism.



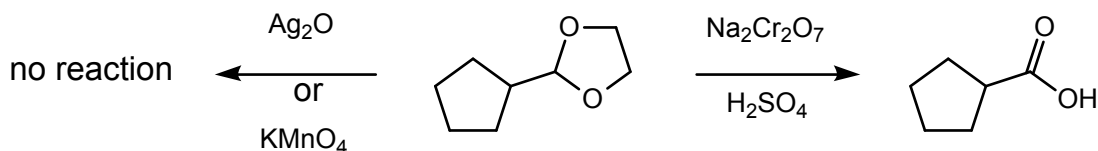
3. Provide a complete mechanism.



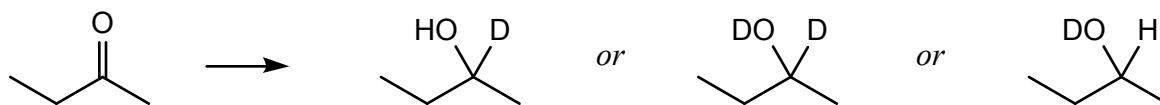
4. Provide a complete mechanism.



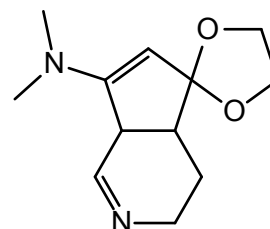
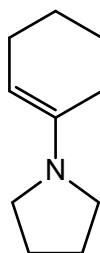
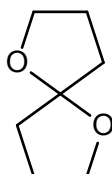
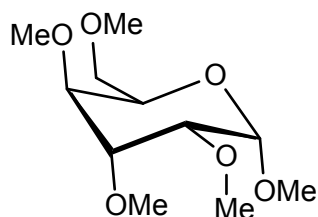
5. Explain why Jones oxidation works but silver oxide (Tollens) or permanganate oxidations fail.



6. Synthesize the following compounds from 2-butanone, using NaBH_4 , NaBD_4 , H_2O , and D_2O as needed. Recall that deuterium (D) is an isotope of hydrogen ($\text{D} = {}^2\text{H}$).



7. Identify all of the expected products when the given compounds are treated with aqueous acid (see SkillBuilder 19.5 and problems 19.61 and 19.62).



8. Provide the reagents needed to transform the given starting material into the desired product. More than one step may be required, and it may help to start with a retrosynthesis of the TM.

