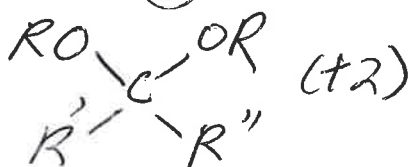


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Recall: Acetals - used as a "protecting group" in organic synthesis

Acetal (generic):



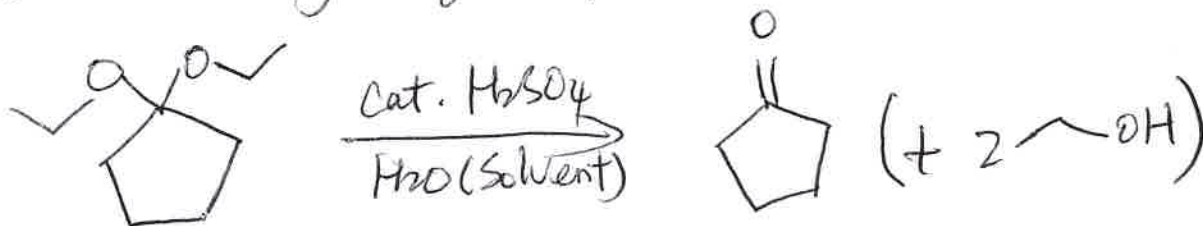
Looks like an ether But...
 Acetals are considered to be derivatives of aldehydes / ketones



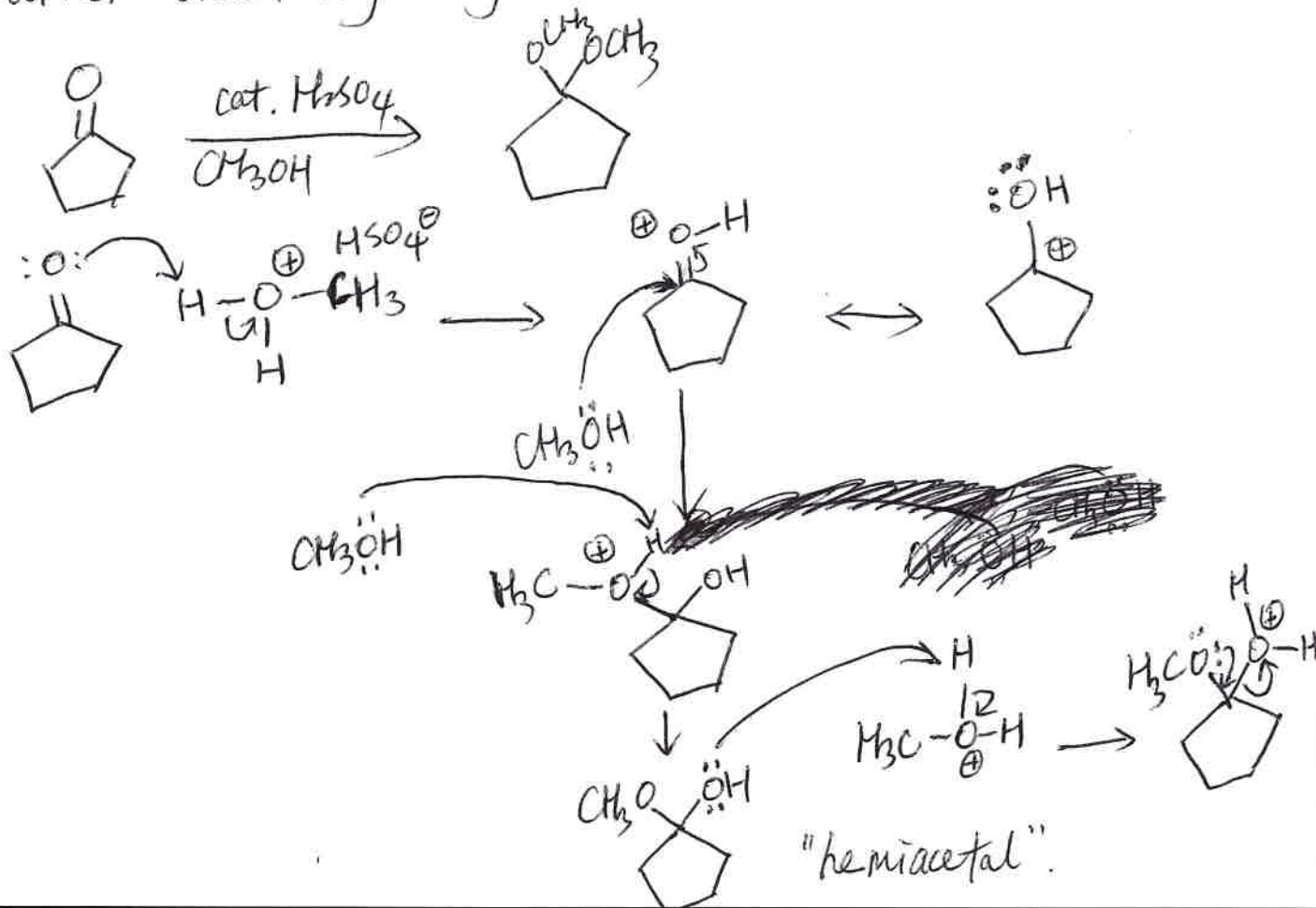
Formation of acetals is reversible. Nature of products is controlled by Le Chatelier's principle. Thus, to convert aldehyde or ketone to acetals, use excess alcohols (solvent) and remove H₂O as it is formed. (Technique outside scope of course).

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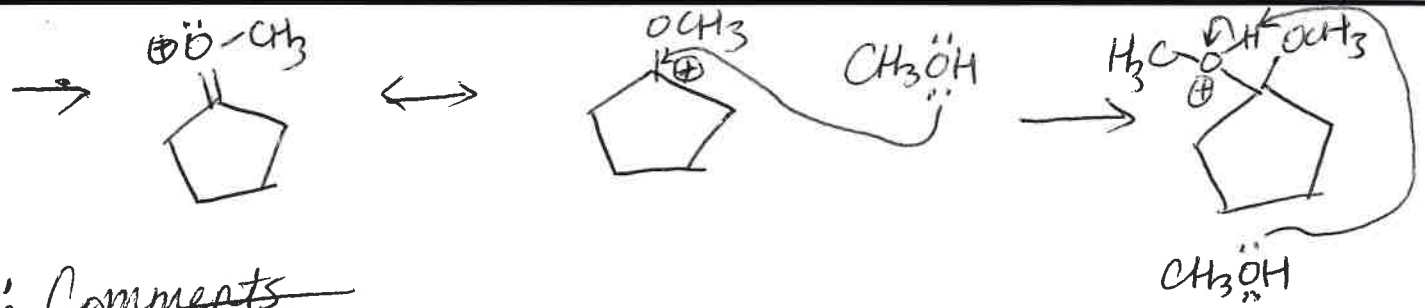
Reverse: Hydrolysis of acetal



Mechanism of formation (all steps reversible) arrows written "one way" b/c we are focusing on formation rather than hydrolysis.

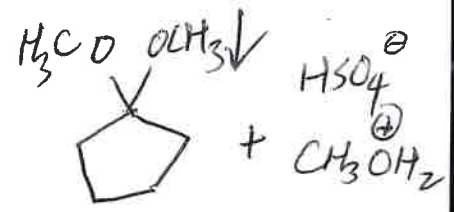


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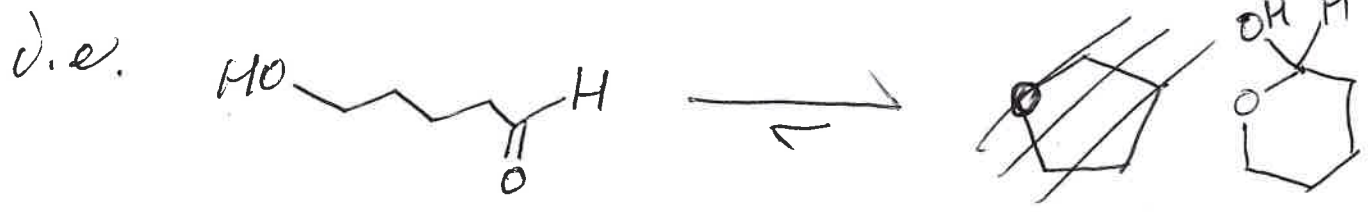


Comments

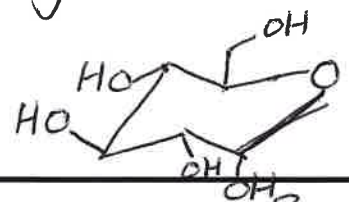
① See if you can draw out the hydrolysis mechanism w/o looking at formation!



② ~~One~~ note intermediates "hemi-acetal". These species are typically not stable (rapid breakdown to carbonyl + H₂O), however cyclic acetals (w/ appropriate ring size) can be quite stable.



" many biological important carbohydrates exist in hemiacetal forms (i.e. glucose)



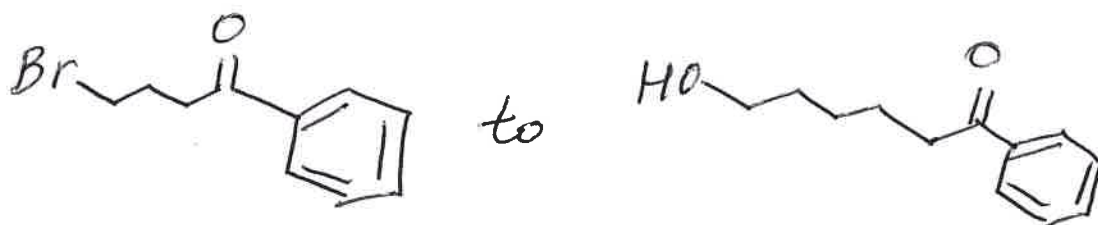
Course Chem 345 Lecturer Gellman
Day Fri Date 3-4-15
Notes Taken By LL Total # of Pages 4

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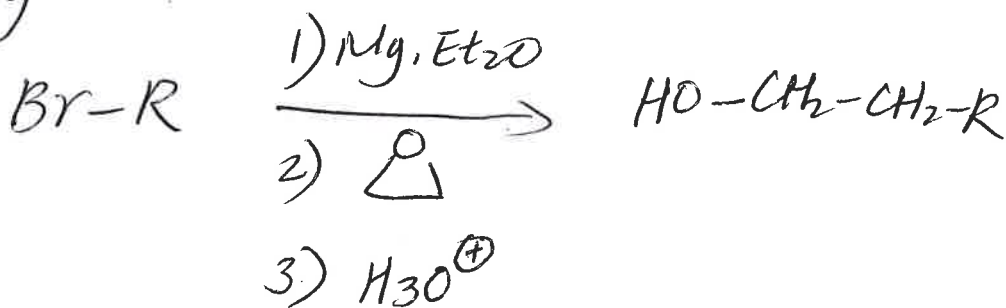
"Protecting group" \Rightarrow a temporary modification that makes undesired reactivity of a particular functional group.

i.e.

Convert



Recognize



PROBLEM

Grignard will not be stable