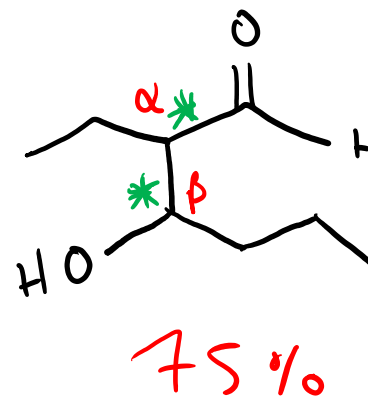
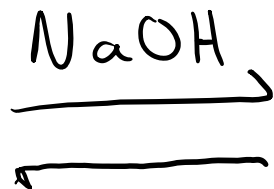
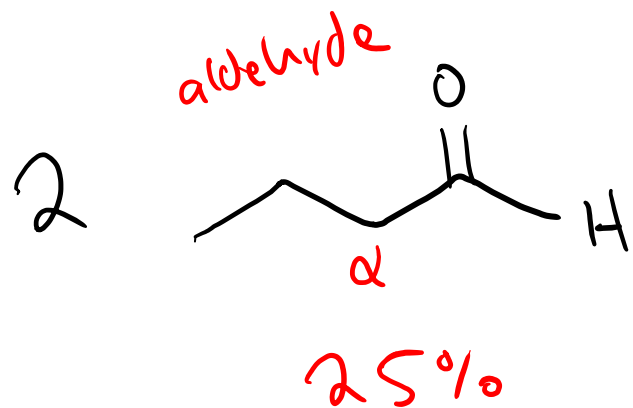


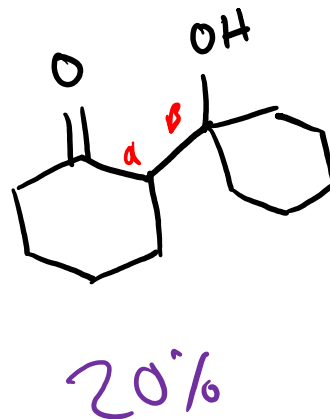
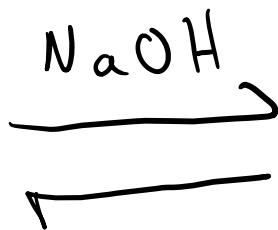
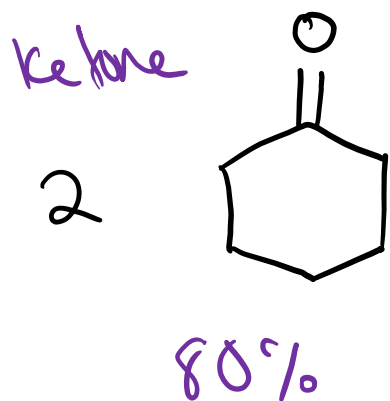
More Aldol Reactions

3/20/2022

Aldol Reaction: Equilibrium Position & Retro-Aldol

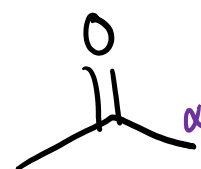
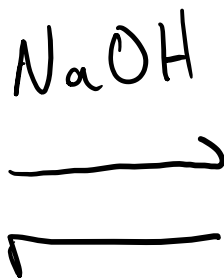
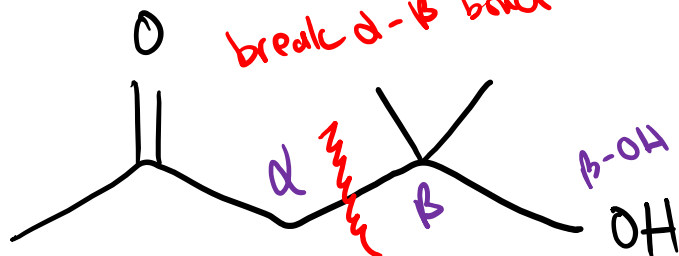


most aldehydes
favor product
at equilibrium



most ketones favor
reactants!
can use to our
advantage: "retro-
Aldol" rxn.

β -hydroxy ketone or aldehyde
break α - β bond



β -hydroxy ketone
undergoes retro-aldol
w/ NaOH!

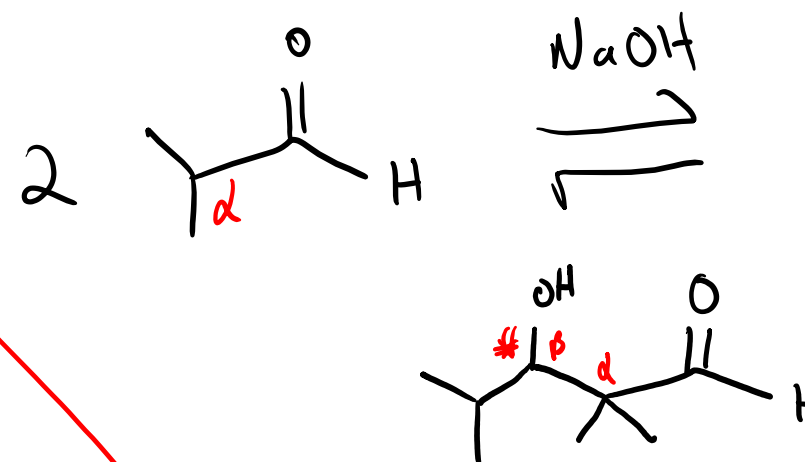
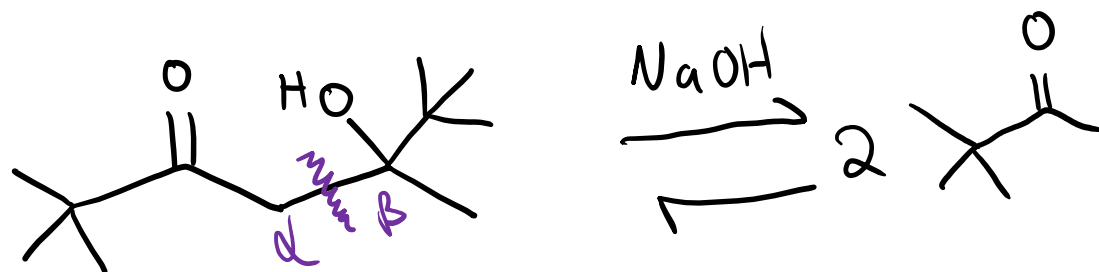
Retro-Aldol: Mechanism



base catalyst regenerated!

on paper - rxn can go either direction w/ creative lab techniques

Examples:



"Crossed" Aldol (or "mixed" Aldol)

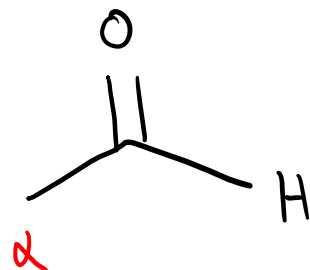
two different ketones / aldehydes

mixture of

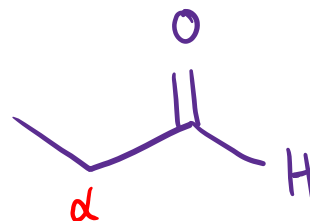
4 possible

products - bad

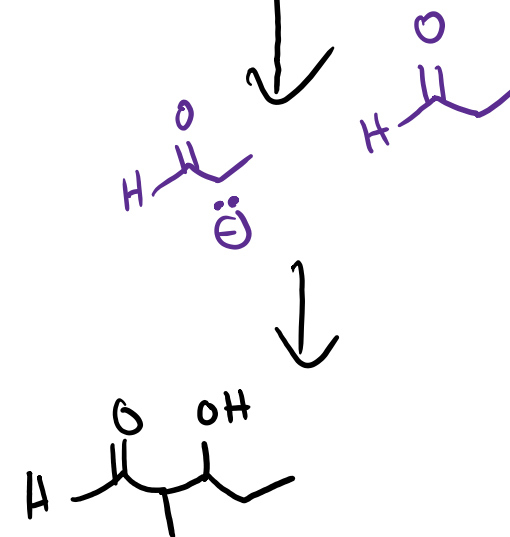
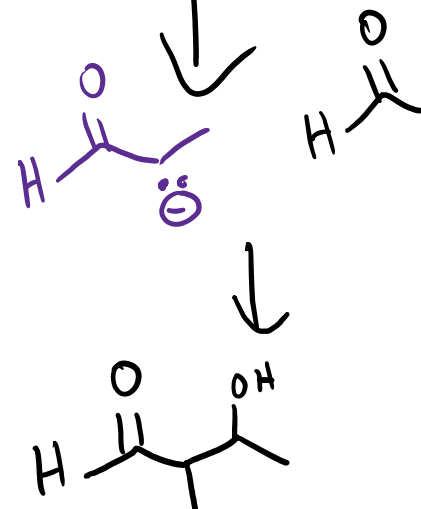
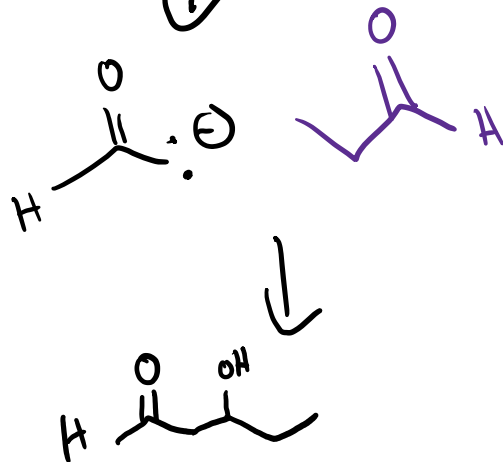
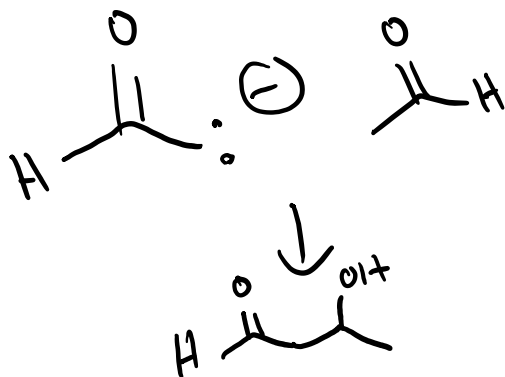
(long of column time)



+



NaOH



Crossed Aldol: Strategy → need to fully convert one of the ketones/aldehydes into an enolate, then add it to the other ketone/aldehyde - Stepwise rxn!

Desired product:

