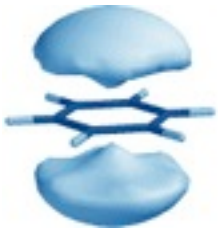
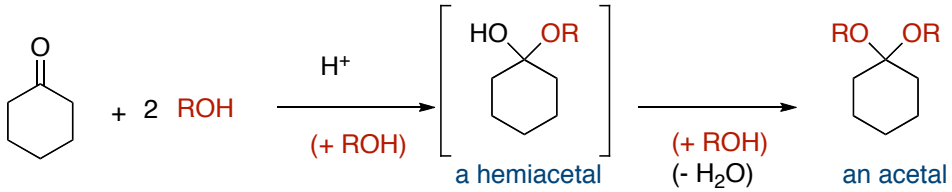


Chem 342 • Organic Chemistry II

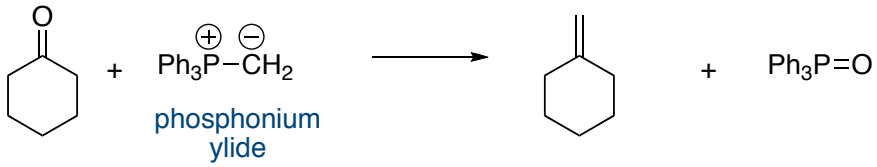
Need to know Reactions and Mechanisms for Exam 03

Reactions of Aldehydes and Ketones

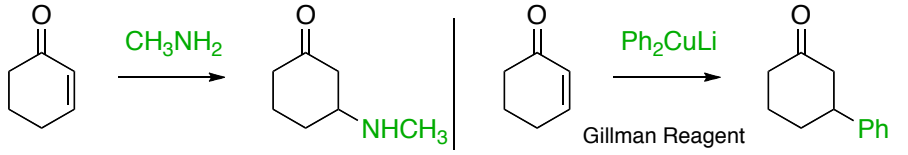


Wittig Reaction

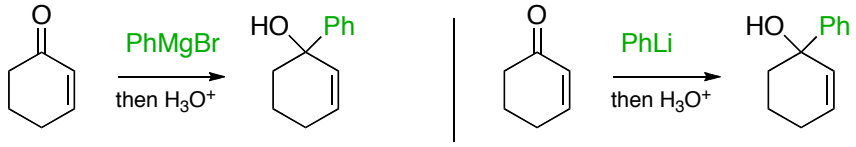
Both aldehydes and ketones participate. The Wittig reagent is made from the alkyl halide by S_N2 reactions.



1,4-Addition

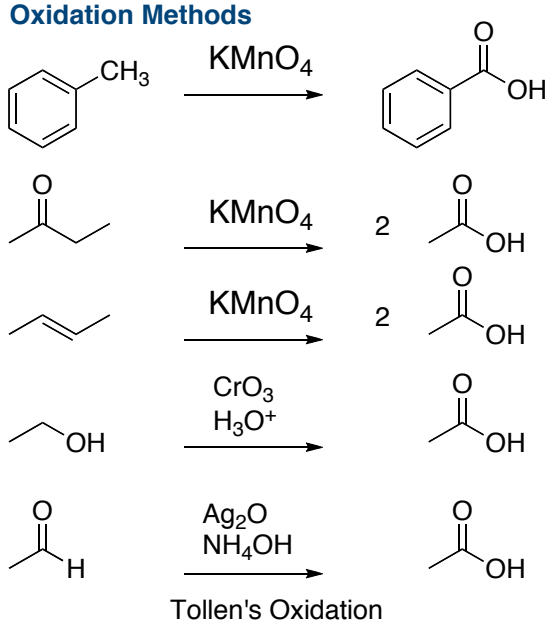


1,2-Addition

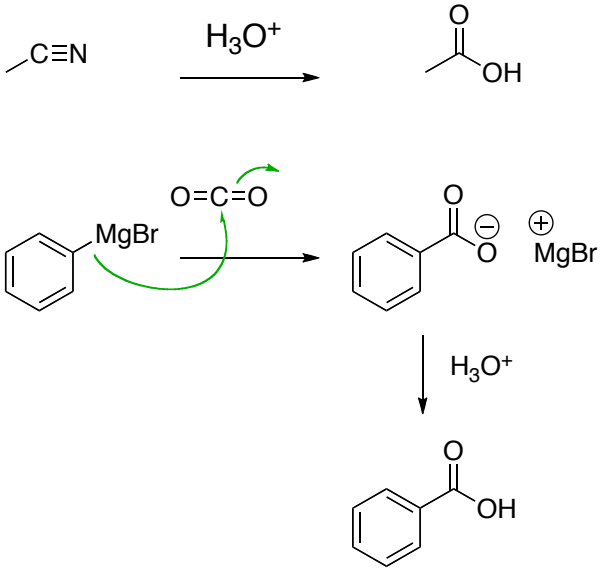


Preparation of Carboxylic Acids

Oxidation Methods

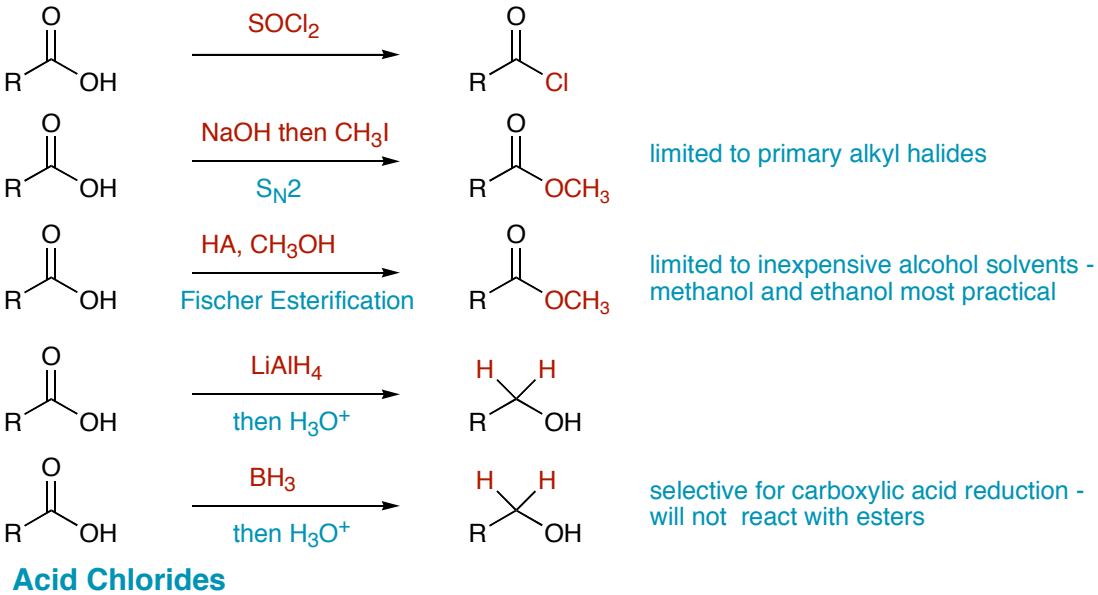


Other Methods

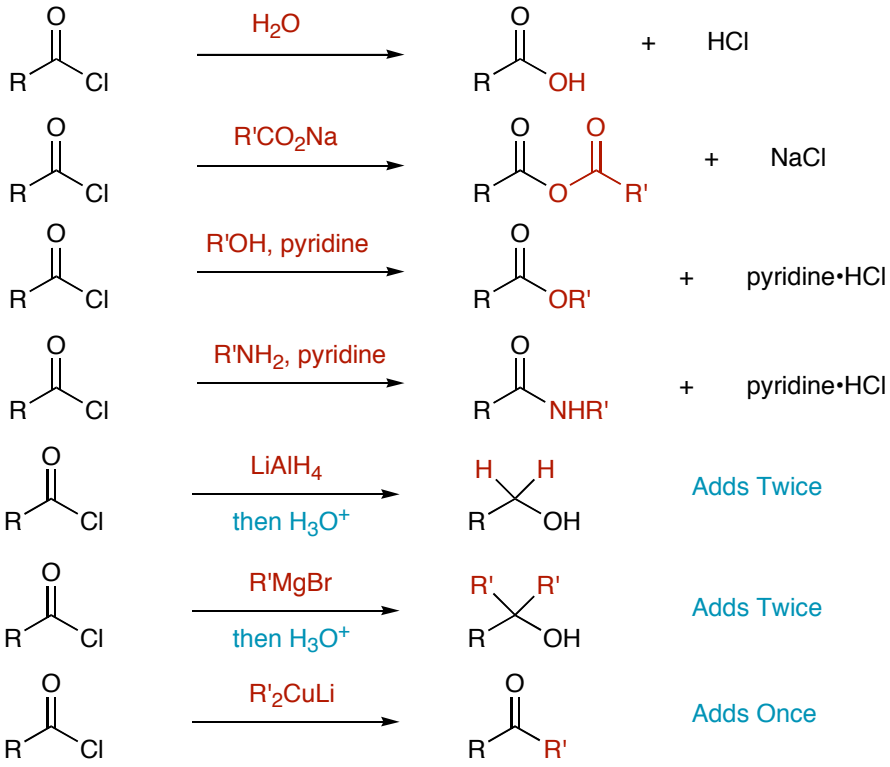


Reactions of Carboxylic Acids and Derivatives

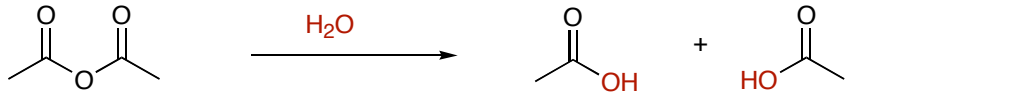
Carboxylic Acids

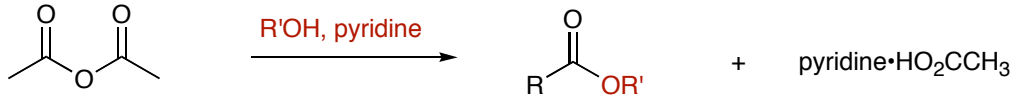


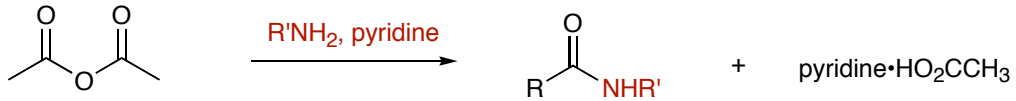
Acid Chlorides

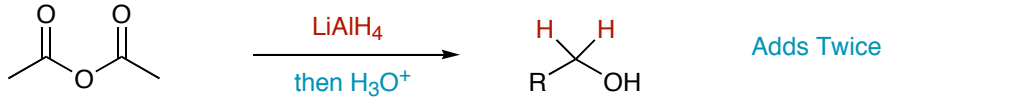


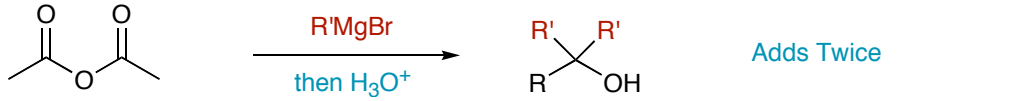
Acid Anhydrides



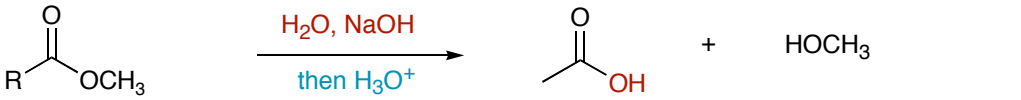


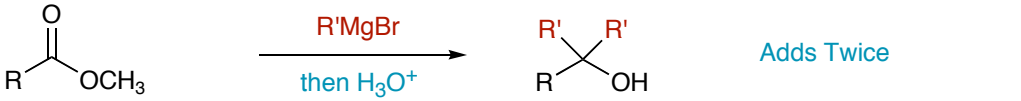


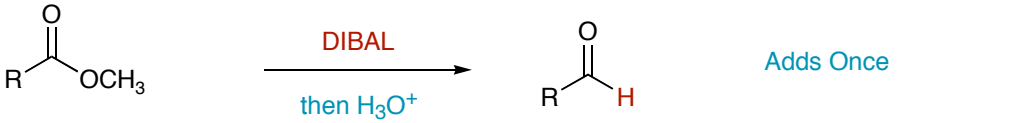




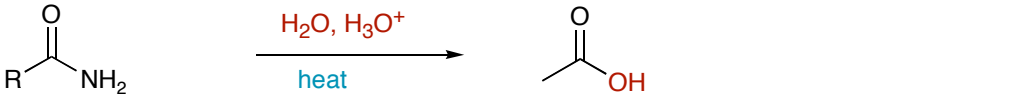
Esters

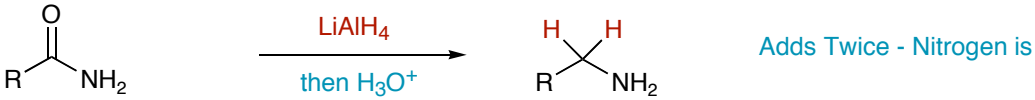




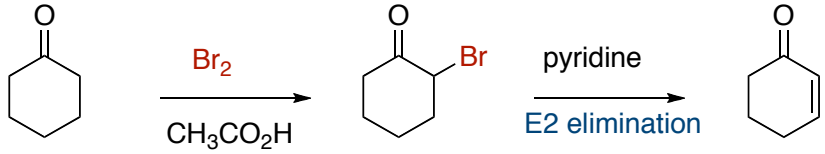


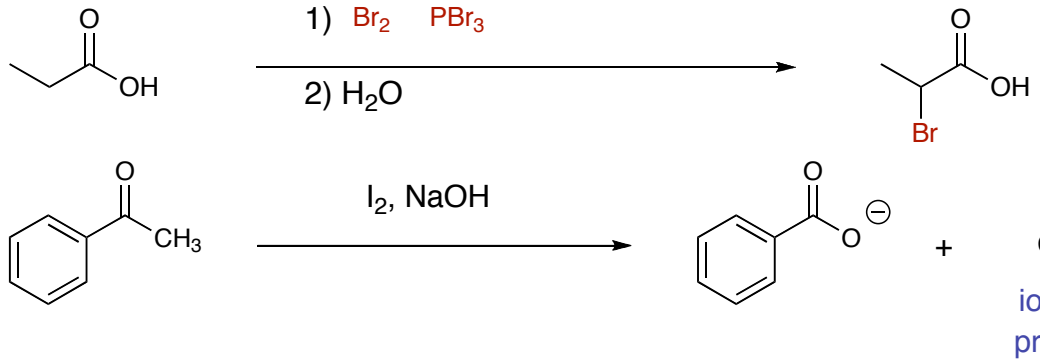
Amides



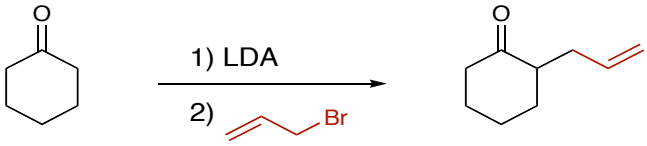


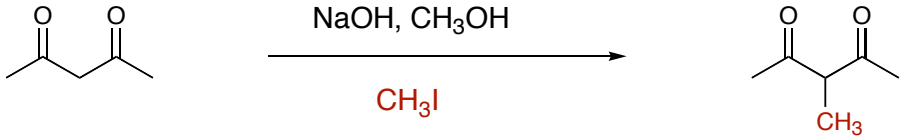
Carbonyl Alpha Substitution





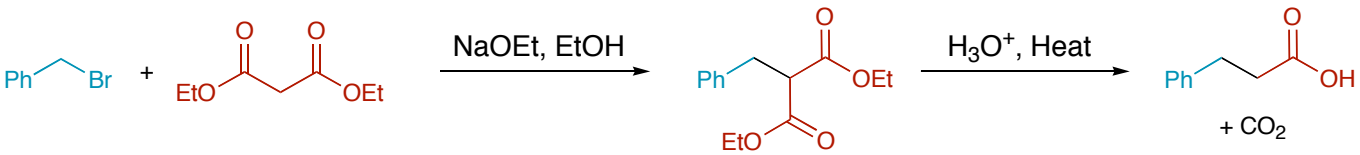
Enolate Alkylation



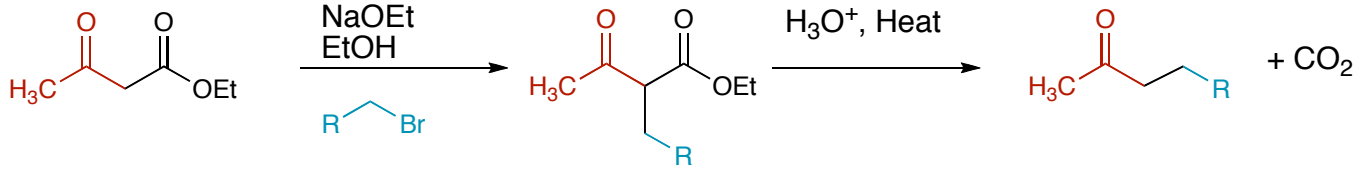


dialkylation, doing a second reaction with the product and the electrophile, is often a problem

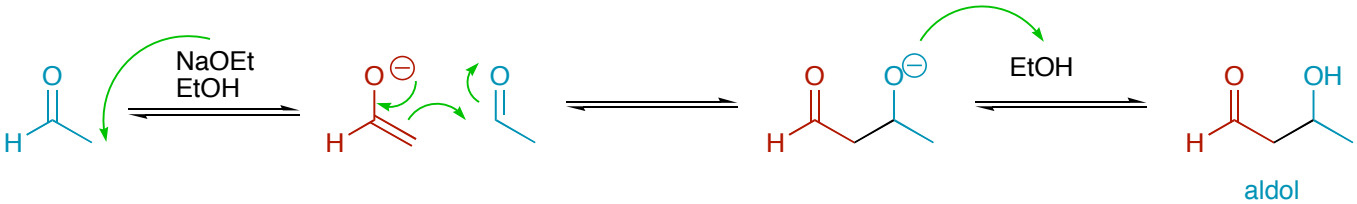
Malonic Ester Synthesis

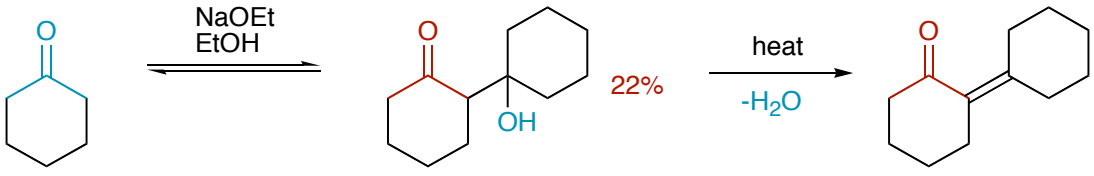


Acetoacetic Ester Synthesis



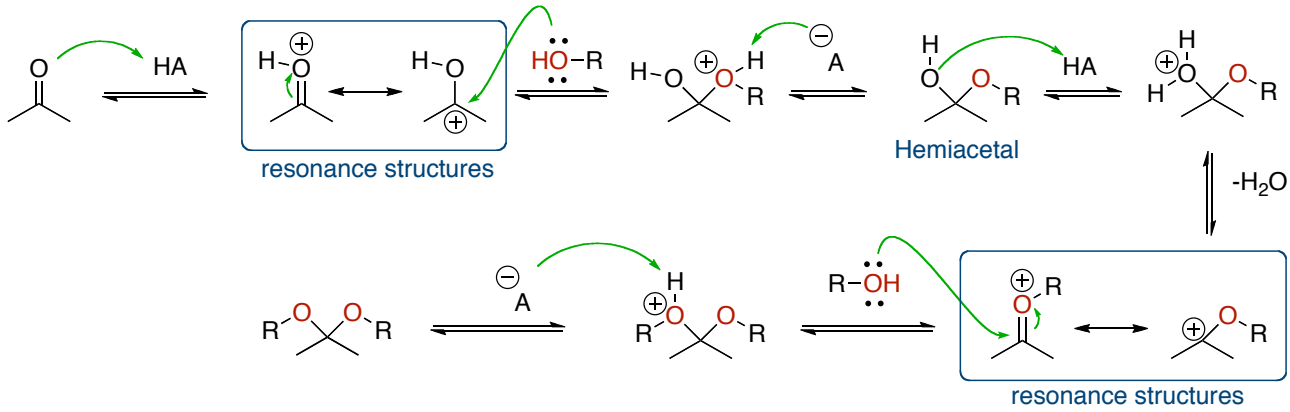
Aldol Reaction (We may not get all the way to this point by Monday. The exam will cover reactions through Monday's lecture so please check where we end on that day.)





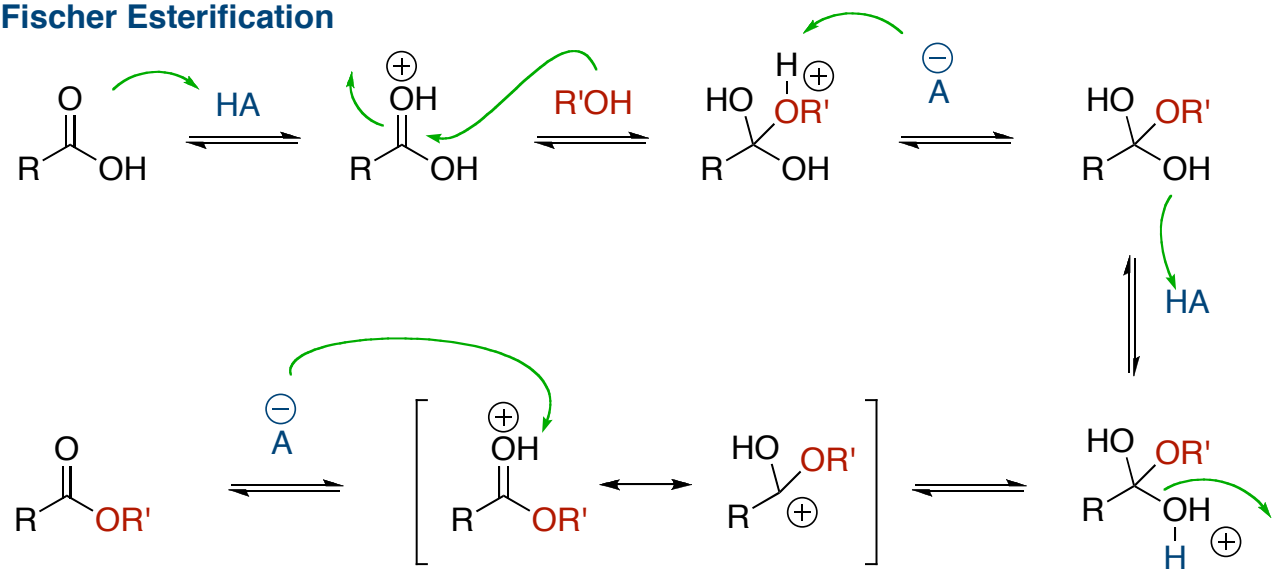
NEED TO KNOW MECHANISM

Mechanism for Acetal Formation



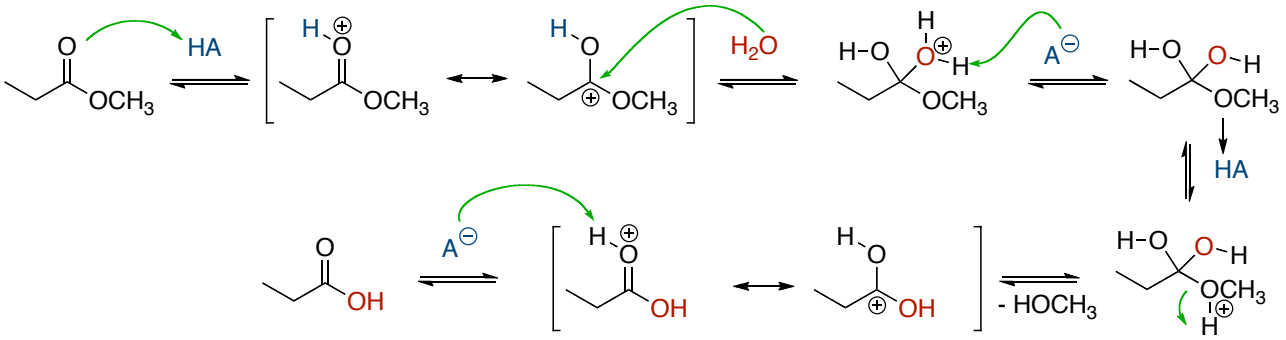
NEED TO KNOW MECHANISM

Fischer Esterification



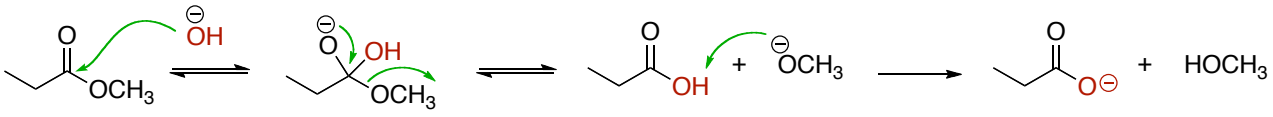
NEED TO KNOW MECHANISMS

Acid Catalyzed Hydrolysis



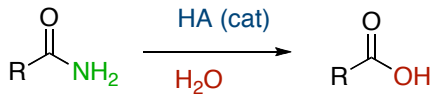
BEST METHOD

Base Catalyzed Hydrolysis (Saponification)



Rapid acid-base reaction takes place

Carboxylate is a thermodynamic sink and makes the reaction essentiall non-reversible. To get the carboxylic acid, add acid to protonate.



Amide Hydrolysis

NEED TO KNOW MECHANISMS

Acid Catalyzed Hydrolysis