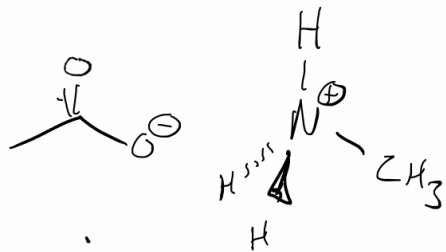
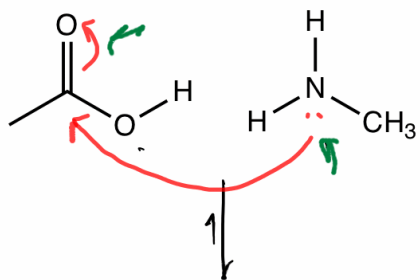


Rework Test 1 by March 8

# Reaction of Carboxylic Acids with Amines

Section 15.10

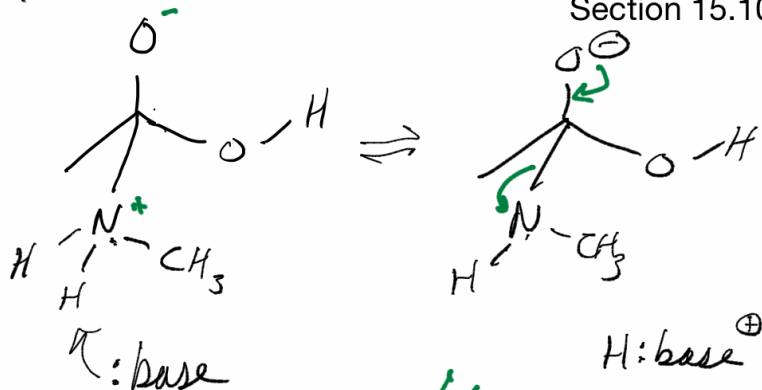


$$K \approx 10^4$$

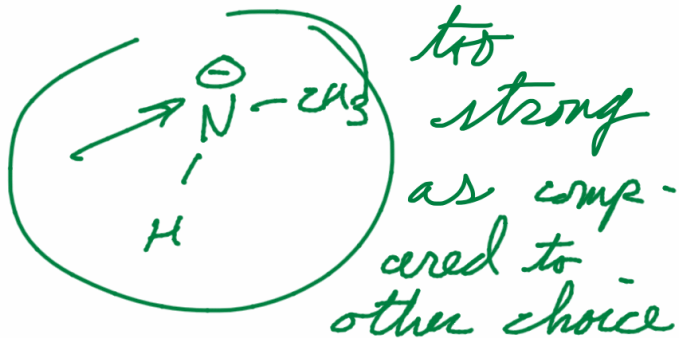
adding heat helps to push this acid base reaction back to reactants

no acid catalyst cuz acids react with amines

tetrahedral intermediate

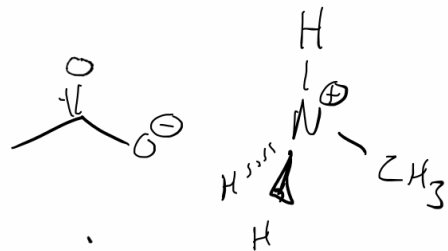
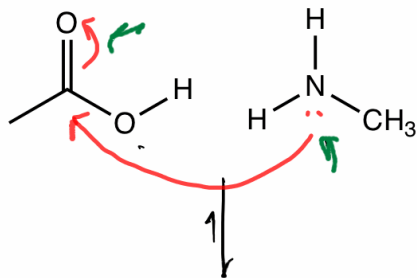


H: base<sup>+</sup>



# Reaction of Carboxylic Acids with Amines

Section 15.10

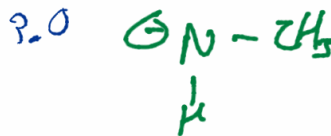
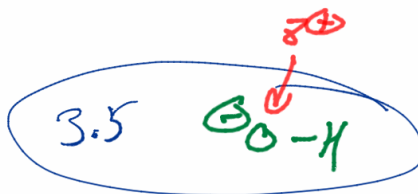
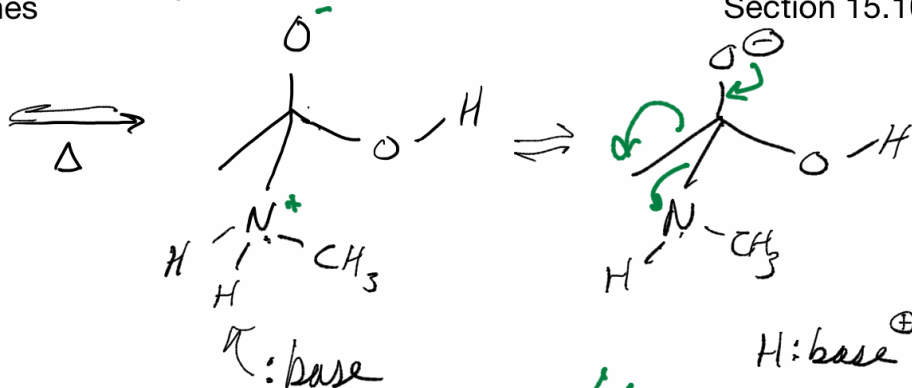


$$K \approx 10^4$$

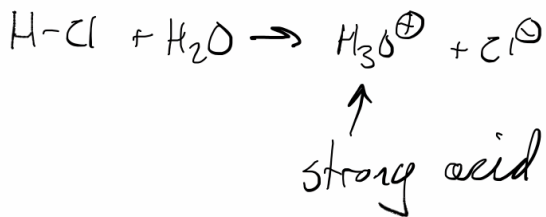
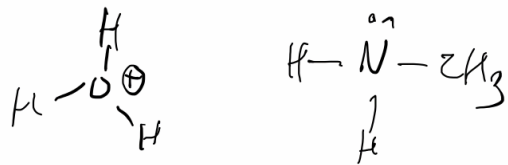
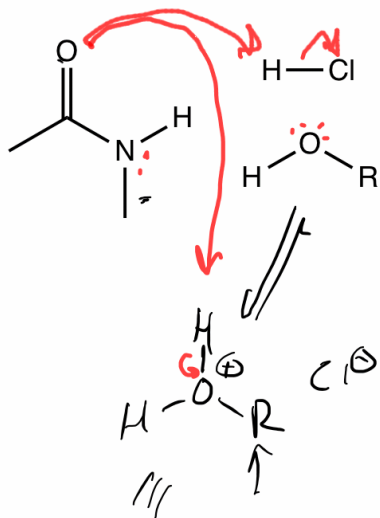
adding heat helps to push this acid base reaction back to reactants

no acid catalyst cuz acids react with amines

tetrahedral intermediate

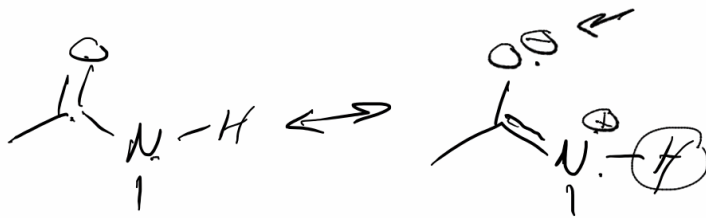


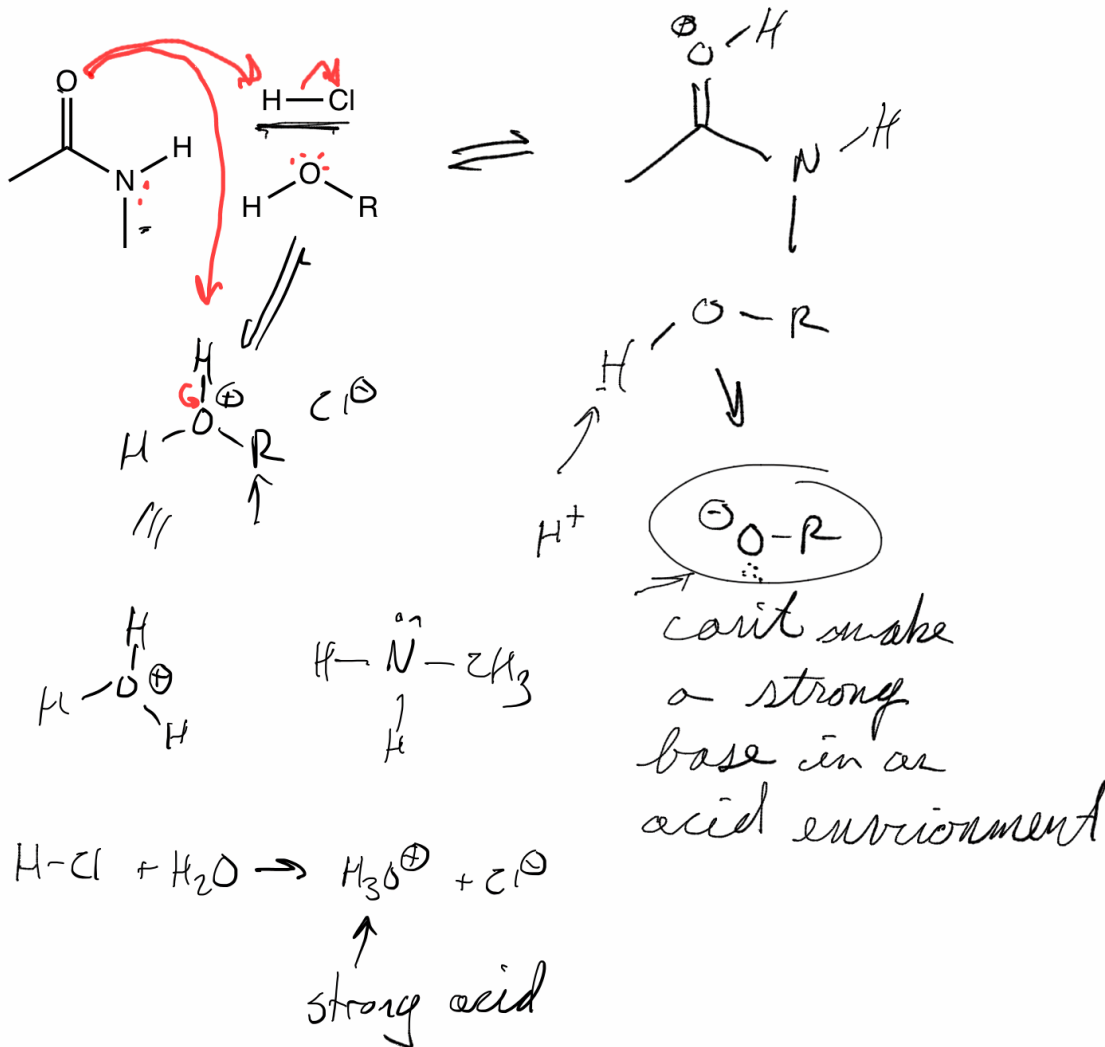
weakest base?  
lowest E?  
most stable  $\ominus$ ?  
same approx size ... so eneg ...



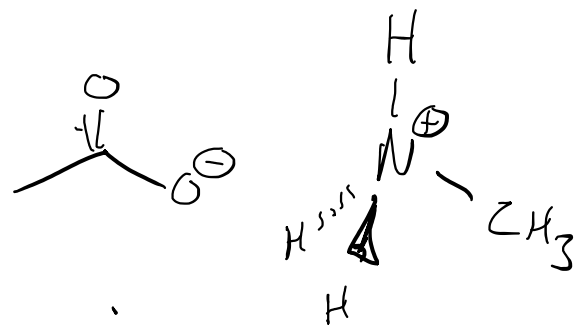
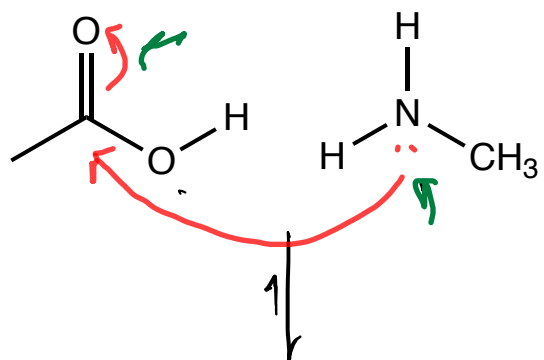
why not protonate the lp e<sup>-</sup>'s on N?  
Normally lp e<sup>-</sup>'s on N are attractive to H<sup>+</sup>...  
what's so special about these e<sup>-</sup>'s?

adjacent db... π bond





# Reaction of Carboxylic Acids with Amines



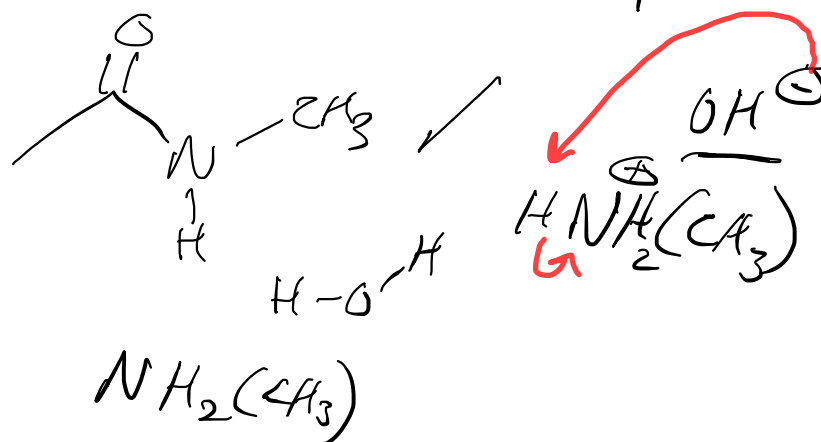
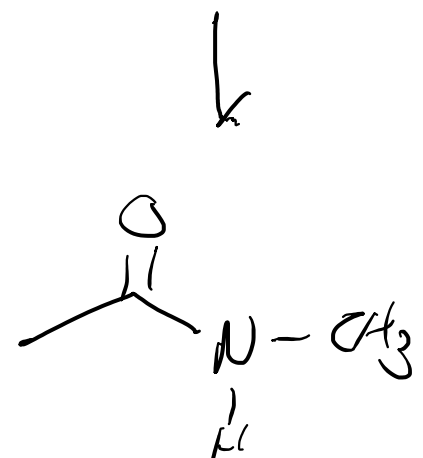
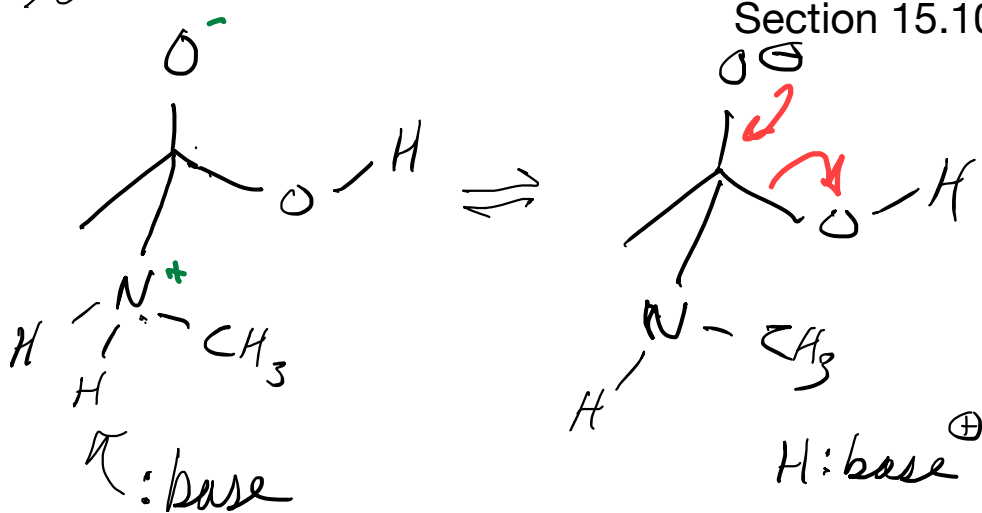
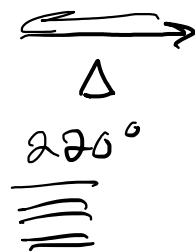
$$K \approx 10^4$$

adding heat helps to push this acid base reaction back to reactants

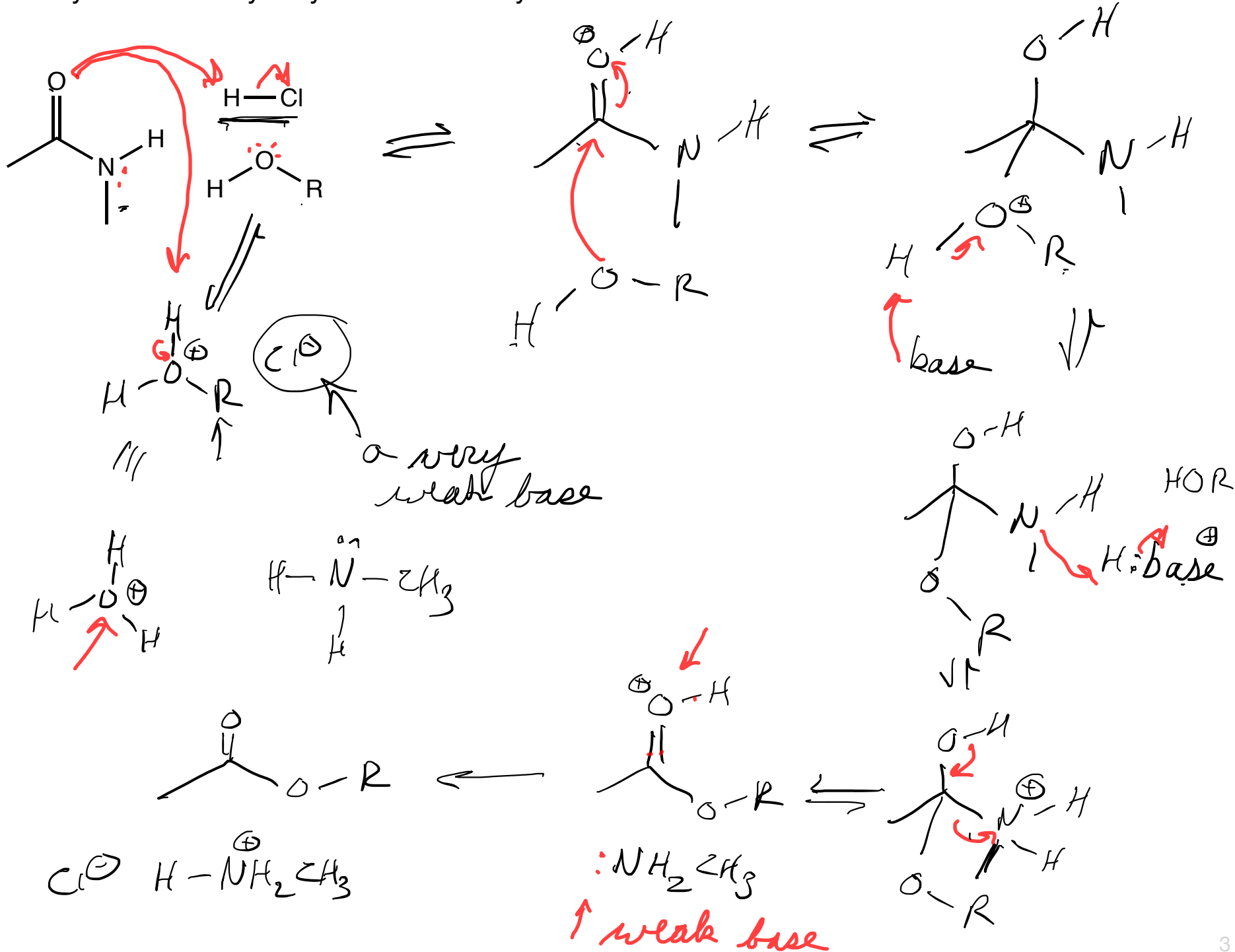
no acid catalyst (carboxylic acids react with amines)

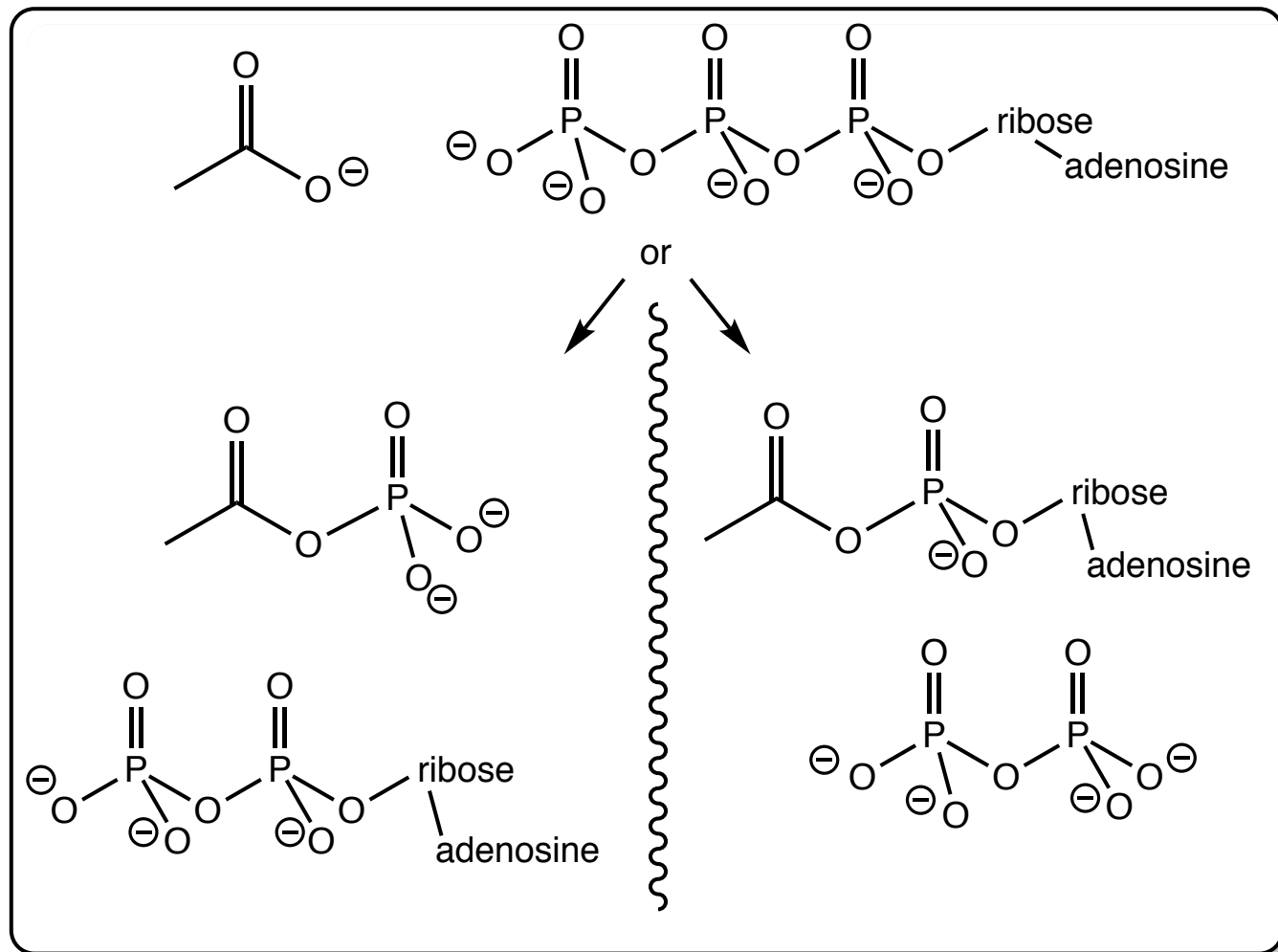
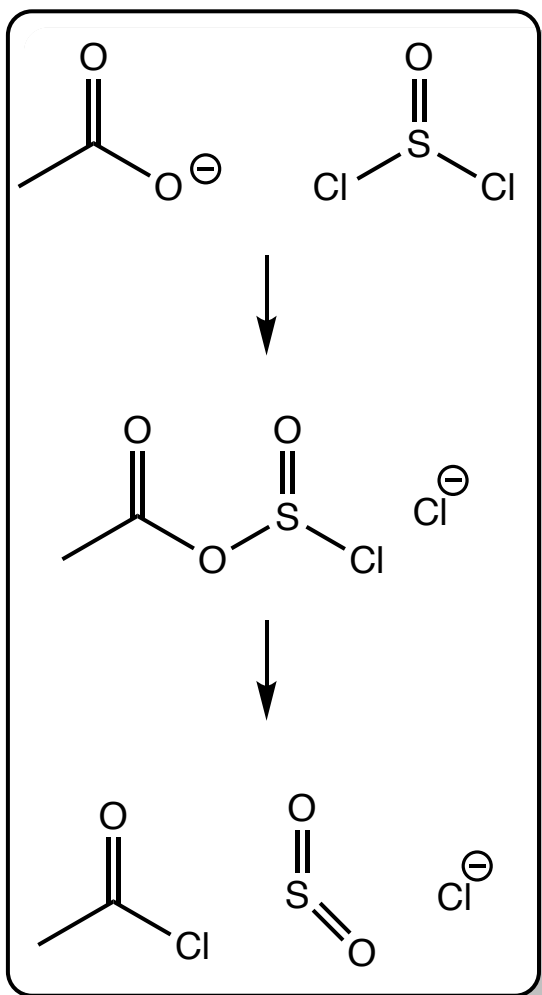
## tetrahedral intermediate

Section 15.10

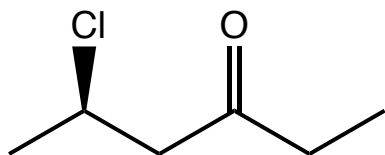
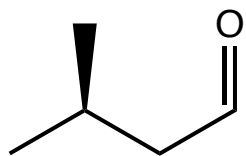


# Acid-Catalyzed Amide Hydrolysis and Alcoholysis



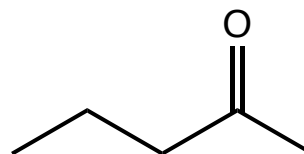
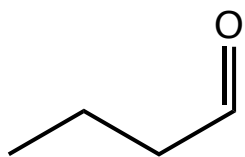






# The Relative Reactivity of Aldehydes and Ketones

## Section 16.2



# How Aldehydes and Ketones React with Nucleophiles

## Section 16.3

