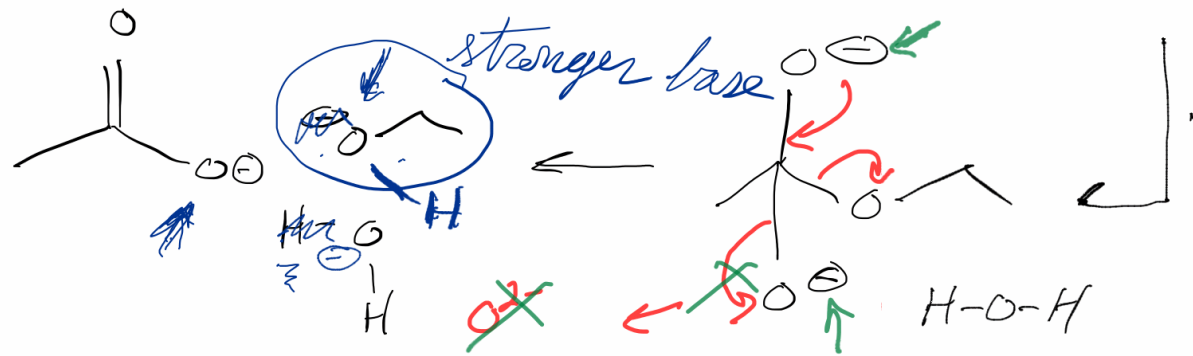
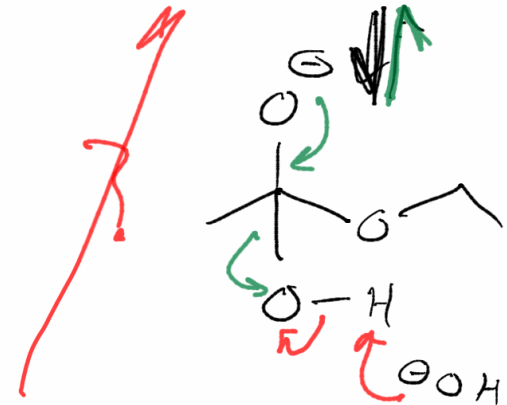
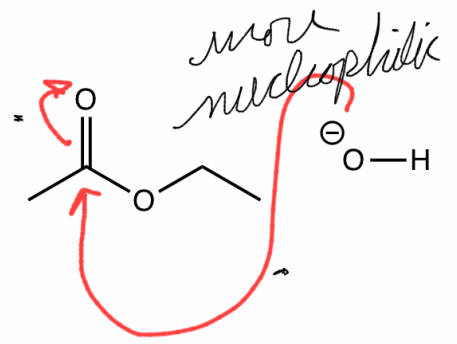
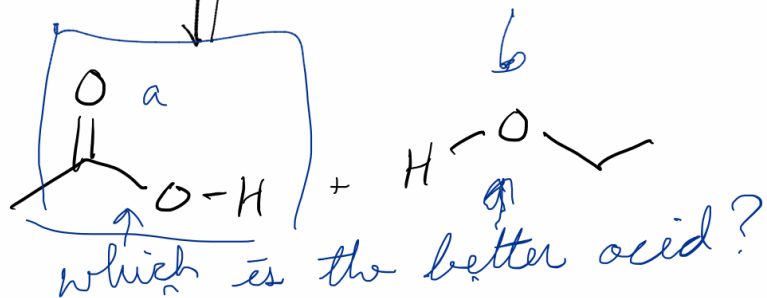
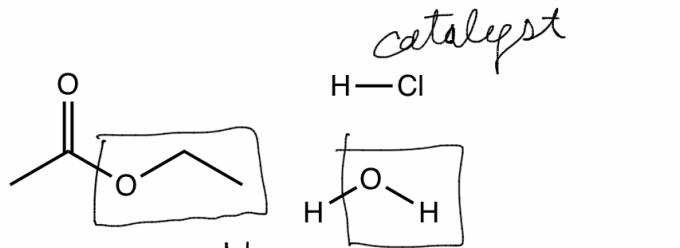


acetic acid
not strongly
attracted to H

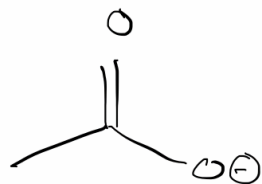
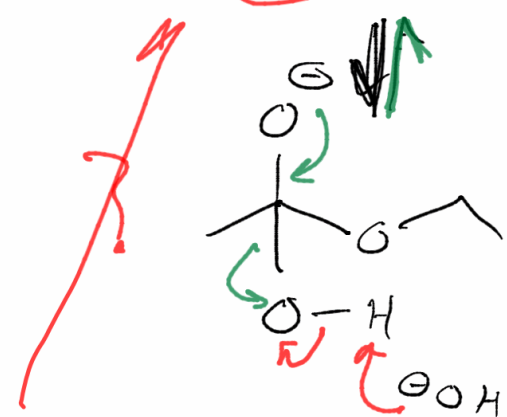
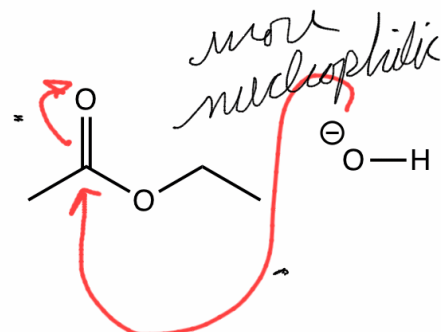
alcohol
strongly attracted





acetic acid
not strongly
attracted to H

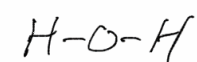
alcohol
strongly attracted



stronger base

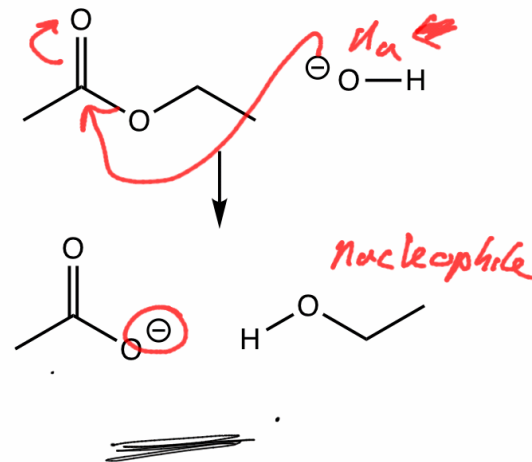
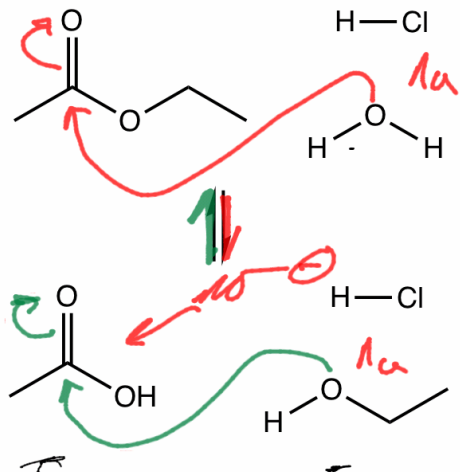


~~OH-~~



Acid-Catalyzed & Base-Promoted Hydrolysis

Sample Questions



Explain why the carbonyl oxygen is more likely to be protonated than the ether oxygen atom.

Describe two ways that the proton helps to speed the reaction.

→ Does this reaction favor the reactants, the products, or neither?

Describe two ways to push this reaction toward the products.

What must be true about the reactants and the products if one wishes to push this reaction to completing by removing the alcohol?

Explain why the base promoted hydrolysis of an ester is a reaction that favors the products, whereas as the acid-catalyzed hydrolysis reactions don't.

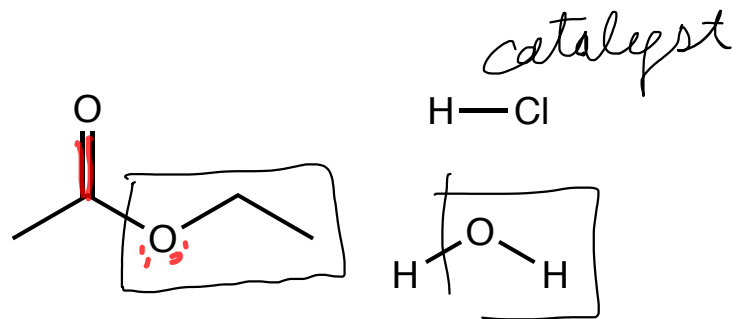
Nucleophiles are attracted to \oplus or \ominus

Carboxylates are \ominus ... repulsive to H_2O

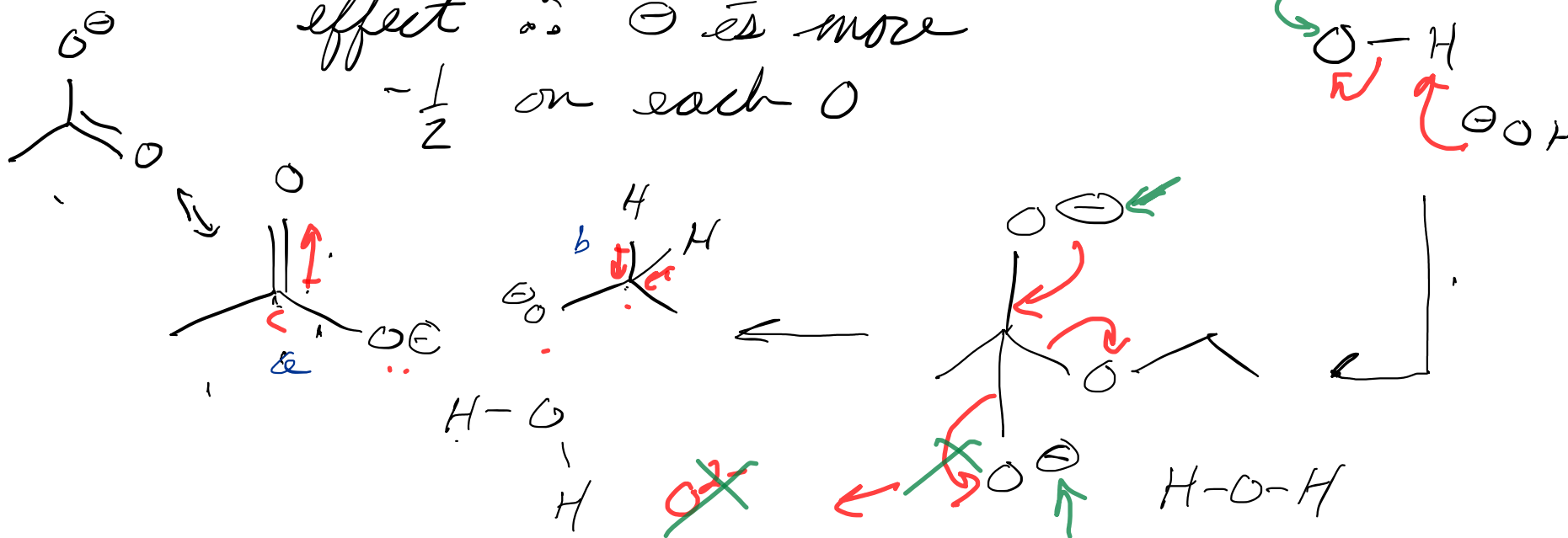
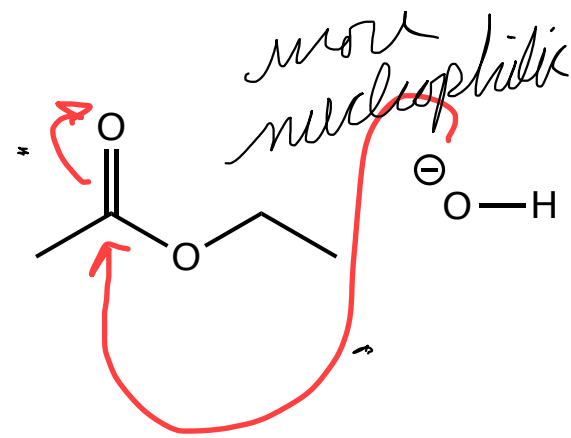
Handwritten interface elements on the right side of the page, including a green checkmark, a red arrow, and various drawing tools like a pencil, eraser, and highlighter.

Acid-Catalyzed & Base-Promoted Hydrolysis

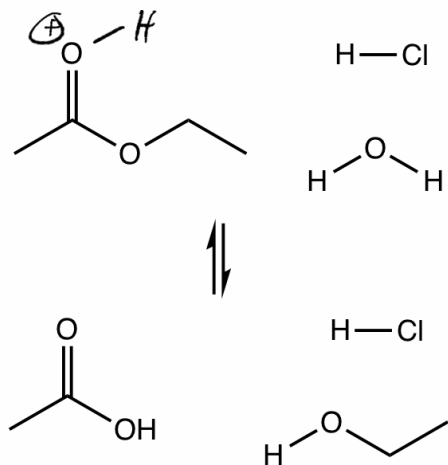
Section 15.8 & 15.9



both have \ominus on O
 \ominus stuck on O atom of b
 \ominus is spread out to both O's by resonance + to the C atom via the inductive effect $\therefore \ominus$ is more $-\frac{1}{2}$ on each O



Acid-Catalyzed & Base-Promoted Hydrolysis



Explain why the carbonyl oxygen is more likely to be protonated than the ether oxygen atom.

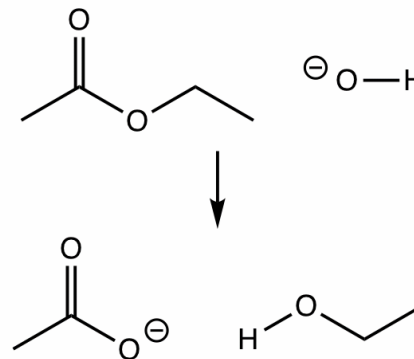
Describe two ways that the proton helps to speed the reaction.

Does this reaction favor the reactants, the products, or neither?

Describe two ways to push this reaction toward the products.

What must be true about the reactants and the products if one wishes to push this reaction to completion by removing the alcohol?

Sample Questions



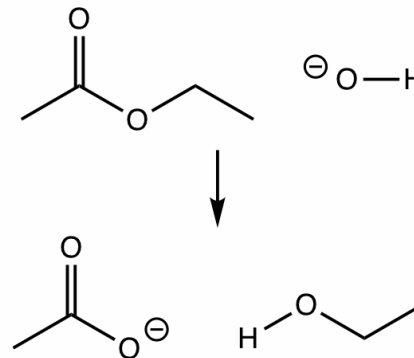
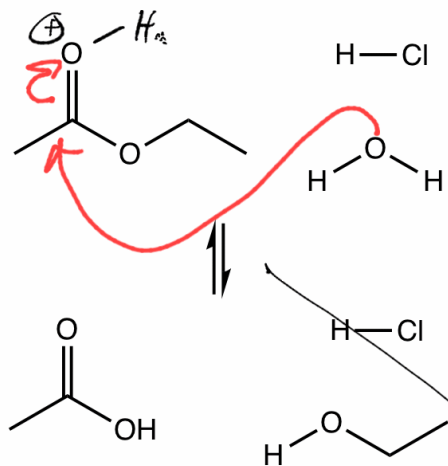
Explain why the base promoted hydrolysis of an ester is a reaction that favors the products, whereas as the acid-catalyzed hydrolysis reactions don't.

H^+ induces a stronger dipole. C is more \oplus . Nu more strongly attracted

Interactive toolbar with icons for erasing, drawing, and navigating.

Acid-Catalyzed & Base-Promoted Hydrolysis

Sample Questions



Explain why the carbonyl oxygen is more likely to be protonated than the ether oxygen atom.

Describe two ways that the proton helps to speed the reaction.

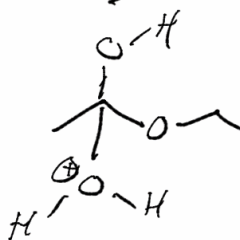
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What must be true about the reactants and the products if one wishes to push this reaction to completion by removing the alcohol?

Explain why the base promoted hydrolysis of an ester is a reaction that favors the products, whereas as the acid-catalyzed hydrolysis reactions don't.

without H^+ ?

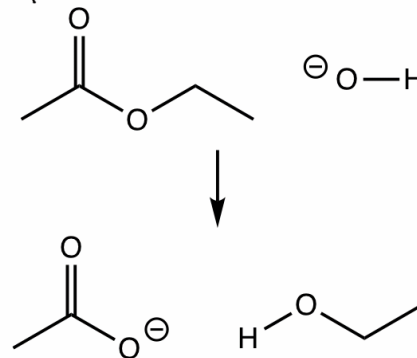
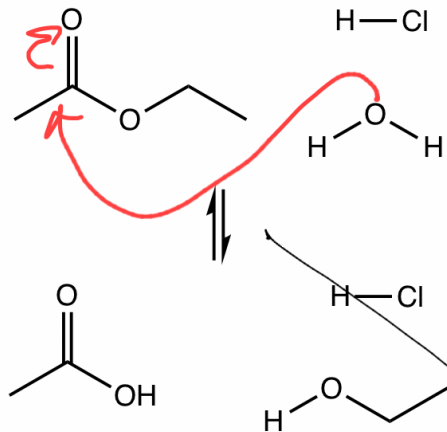


Interactive toolbar with icons for: close (x), checkmark (green), pencil (green), pencil (red), pencil (blue), pencil (black), eraser, highlighter, hand, and refresh.

Acid-Catalyzed & Base-Promoted Hydrolysis

one alkoxides a good LG?

Sample Questions



Explain why the carbonyl oxygen is more likely to be protonated than the ether oxygen atom.

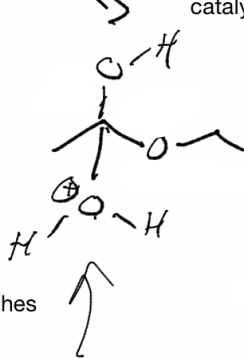
Describe two ways that the proton helps to speed the reaction.

Does this reaction favor the reactants, the products, or neither?

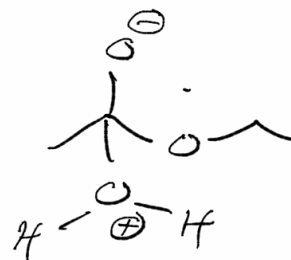
Describe two ways to push this reaction toward the products.

What must be true about the reactants and the products if one wishes to push this reaction to completing by removing the alcohol?

Explain why the base promoted hydrolysis of an ester is a reaction that favors the products, whereas as the acid-catalyzed hydrolysis reactions don't.



without H⁺?



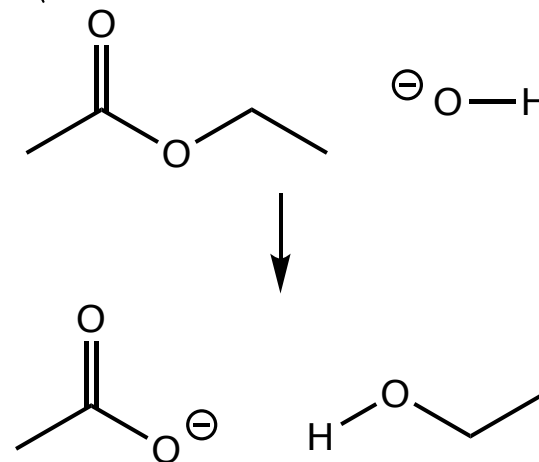
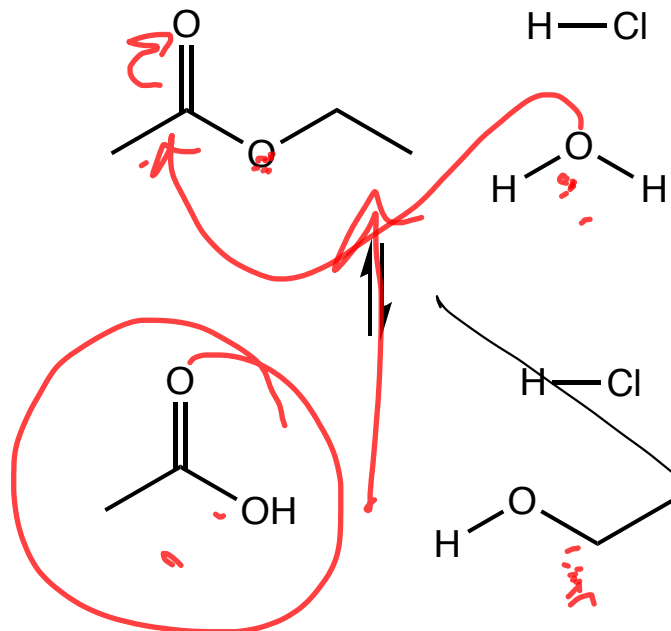
zwitterionic higher in E

UI sidebar with icons: close (x), checkmark, pencil, eraser, highlighter, and other drawing tools.

Acid-Catalyzed & Base-Promoted Hydrolysis

are alkoxides a good LG?

Sample Questions



Explain why the carbonyl oxygen is more likely to be protonated than the ether oxygen atom.

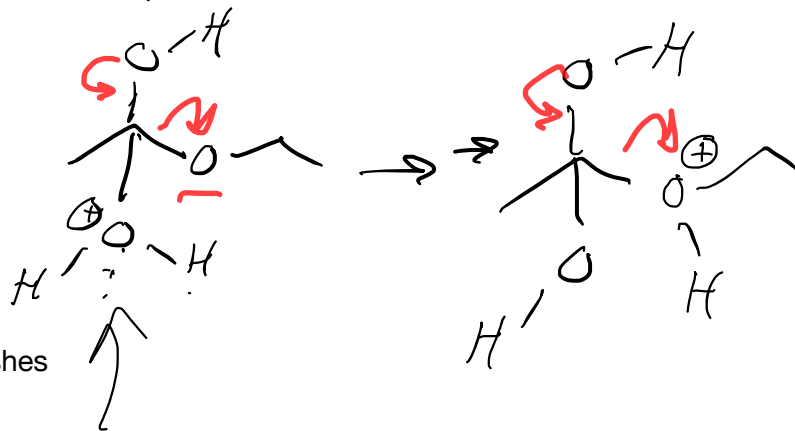
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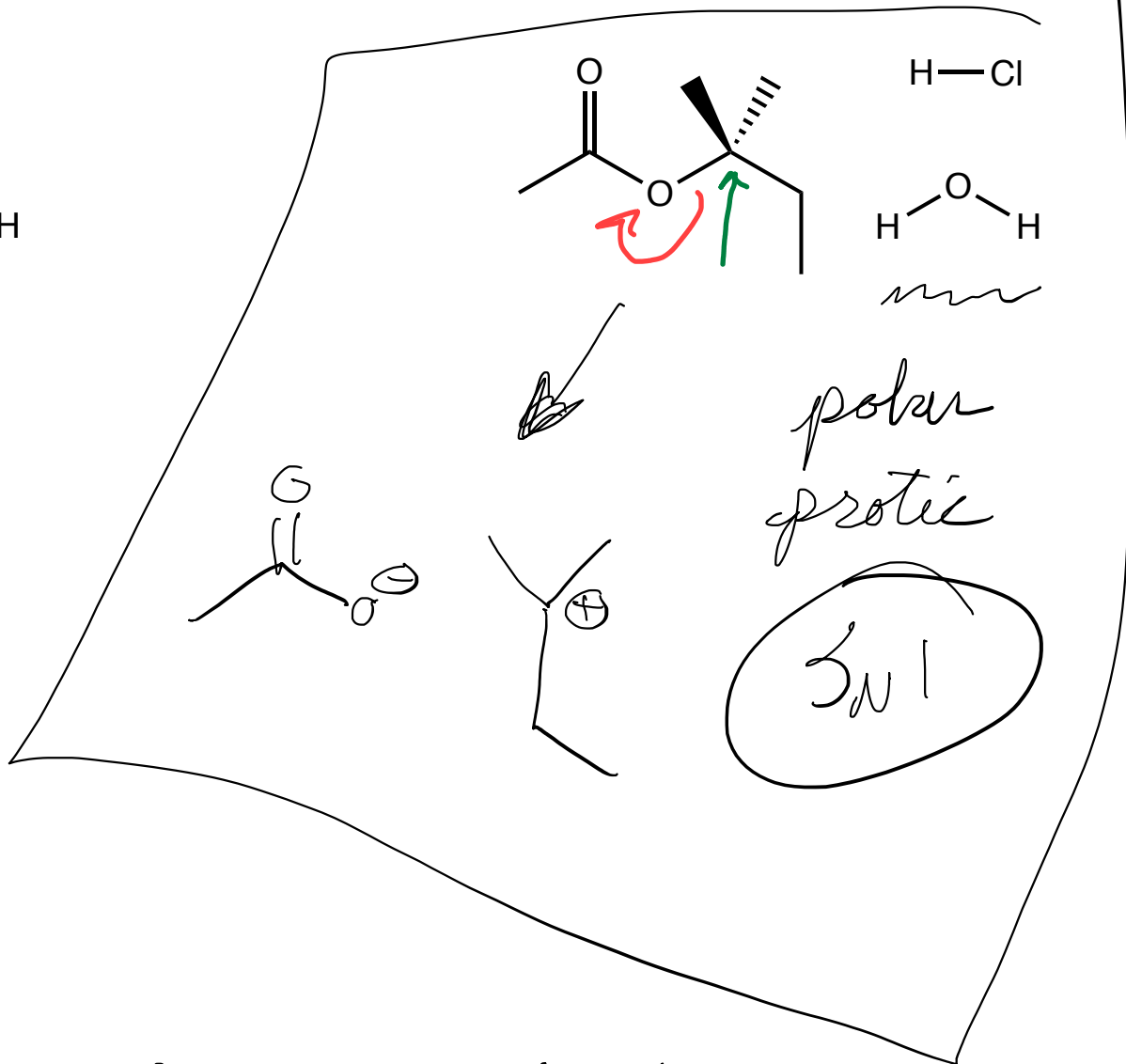
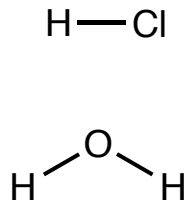
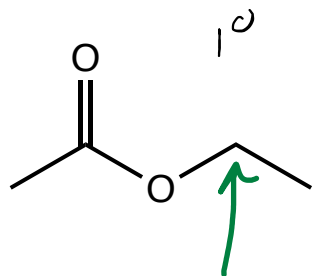
Explain why the base promoted hydrolysis of an ester is a reaction that favors the products, whereas as the acid-catalyzed hydrolysis reactions don't.



Complications in Acid Catalyzed Hydrolysis...

3°

Section 15.8

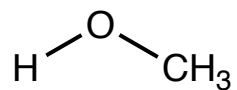
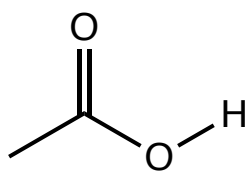


protic solvent ... H-bond donor solvent

° of substitution # of C atoms connected to C

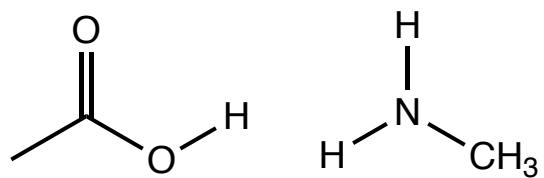
Reaction of Carboxylic Acids with Alcohols

Section 15.10



Reaction of Carboxylic Acids with Amines

Section 15.10



Acid Catalyzed Amide Hydrolysis and Alcoholysis

Section 15.12

