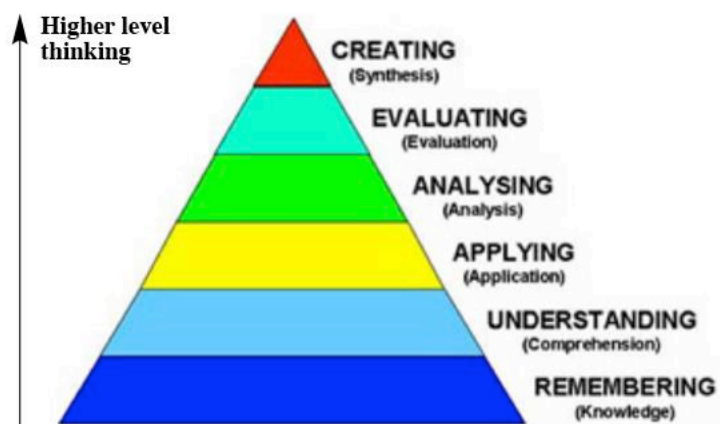
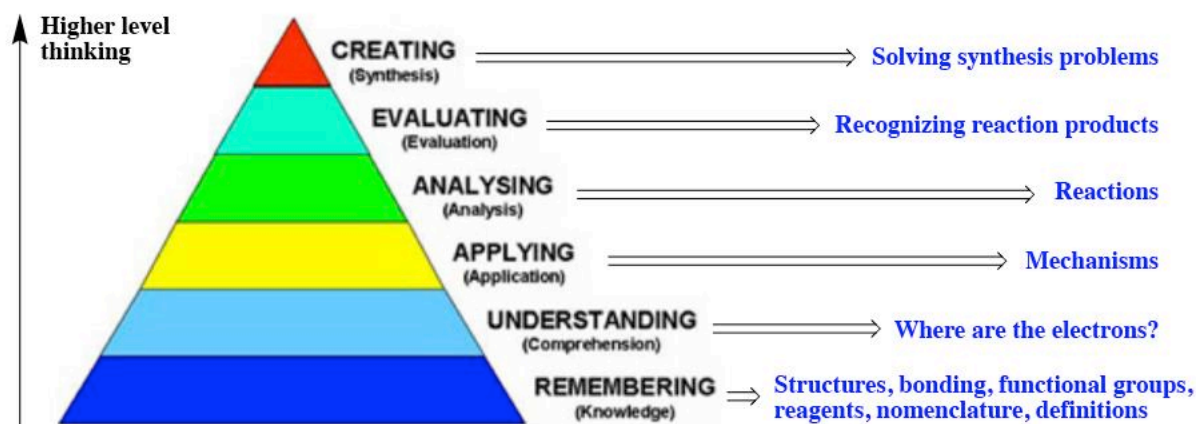


Bloom's Taxonomy of Learning



Bloom's Taxonomy of Learning

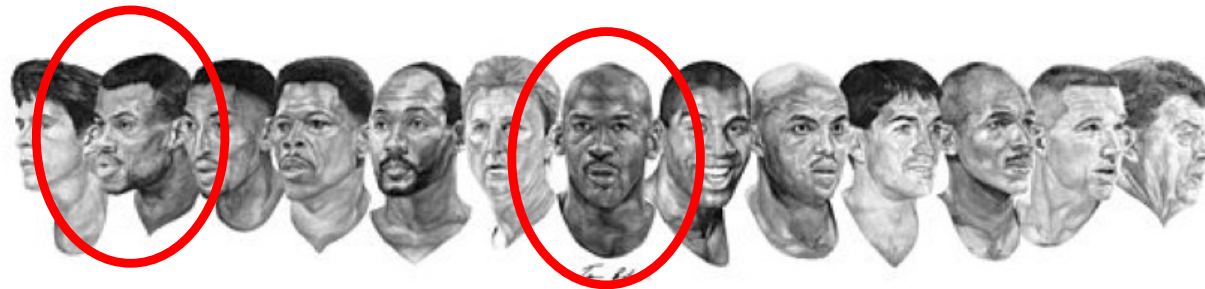
Organic Chemistry Analog



File: Dream Team Basketball 1992 Olympic Games Barcelona.jpg

From Wikipedia, the free encyclopedia

[File](#) [File history](#) [File usage](#)



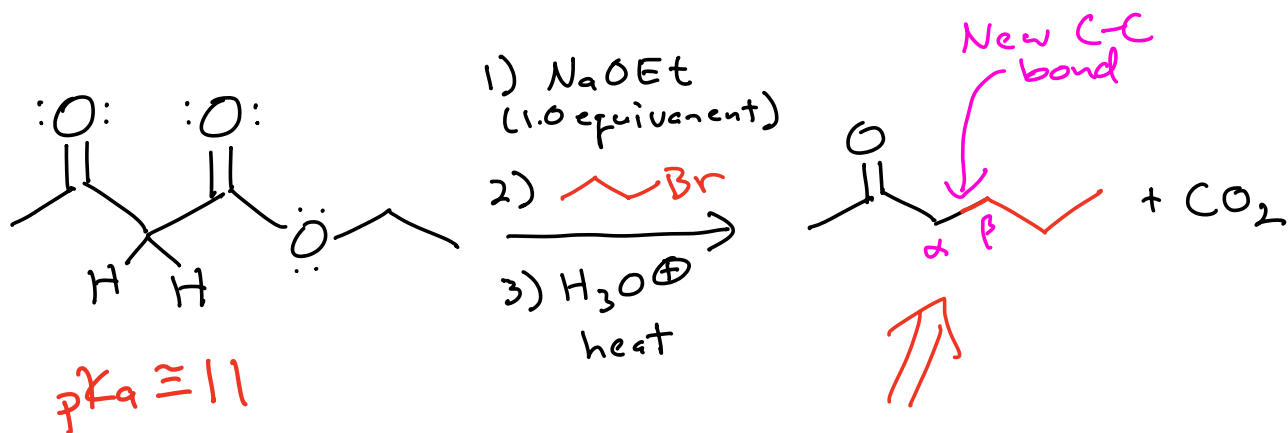
Michael

Robinson

Iverson



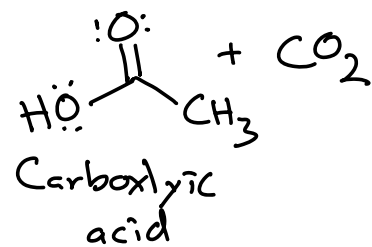
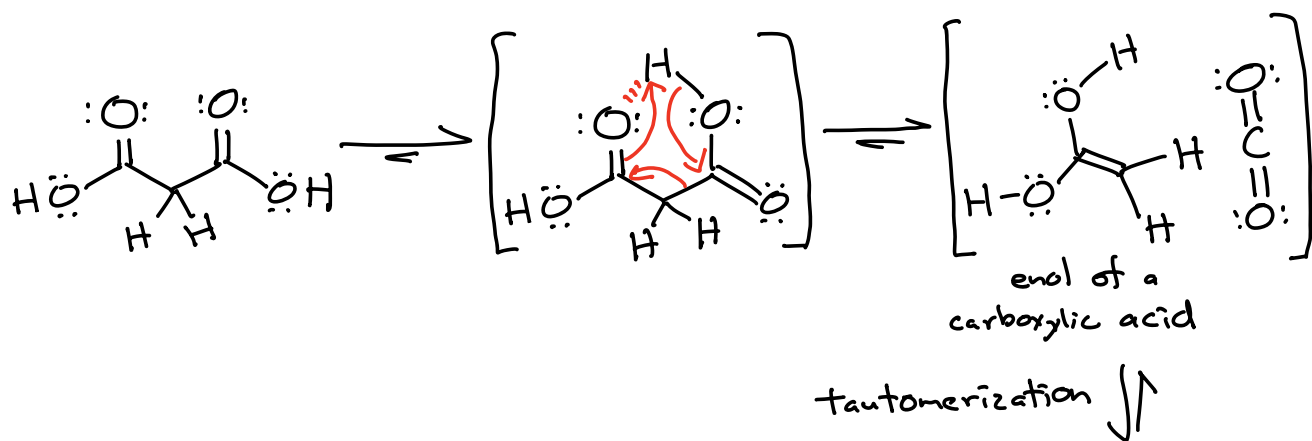
Acetoester Synthesis Summary



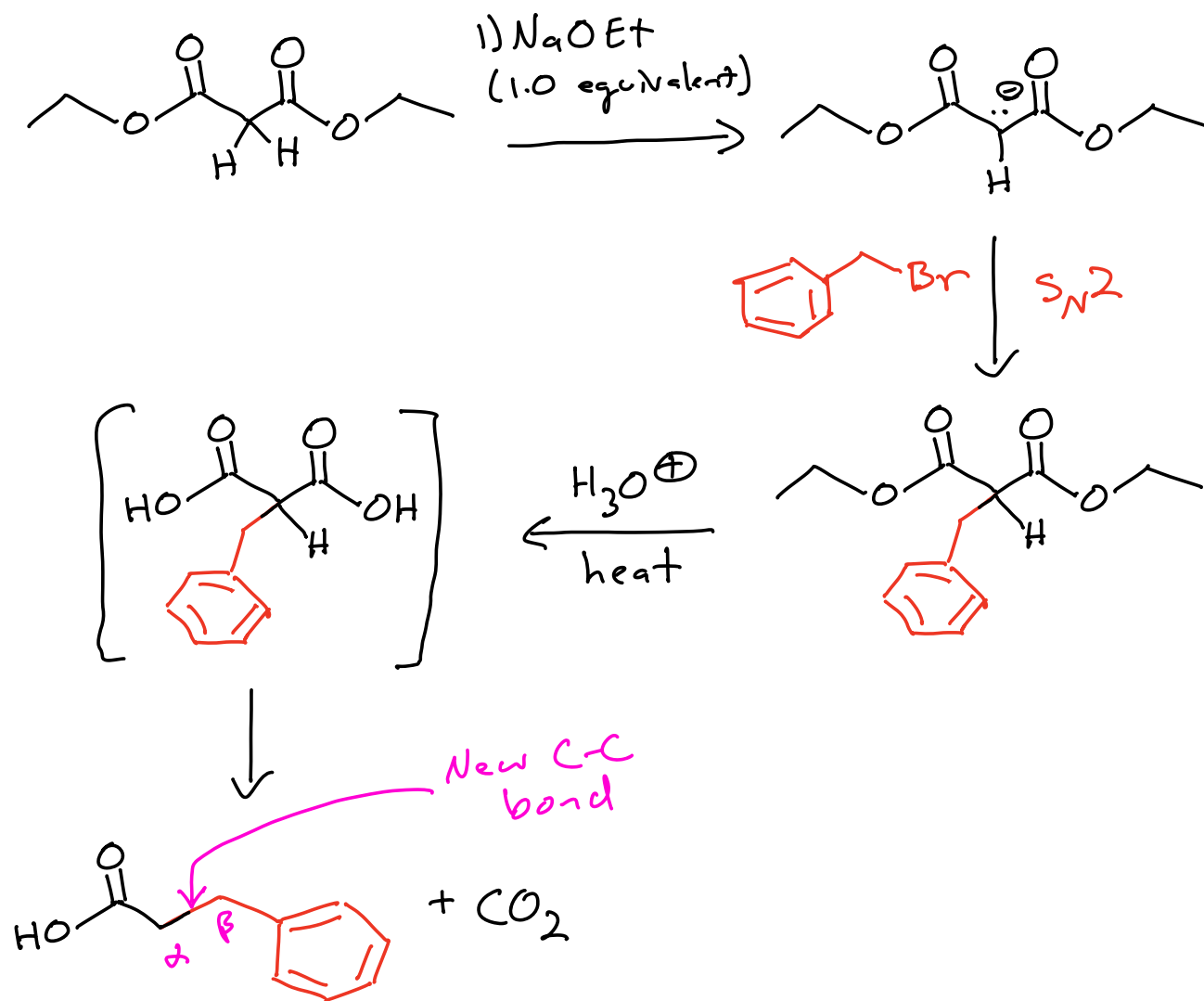
KRE - A methyl ketone
with a new C-C
bond between the
 α and β carbon atoms

Malonic Ester Synthesis

Malonic acid decarboxylates with heat to give a carboxylic acid and CO_2



We start with diethyl malonate

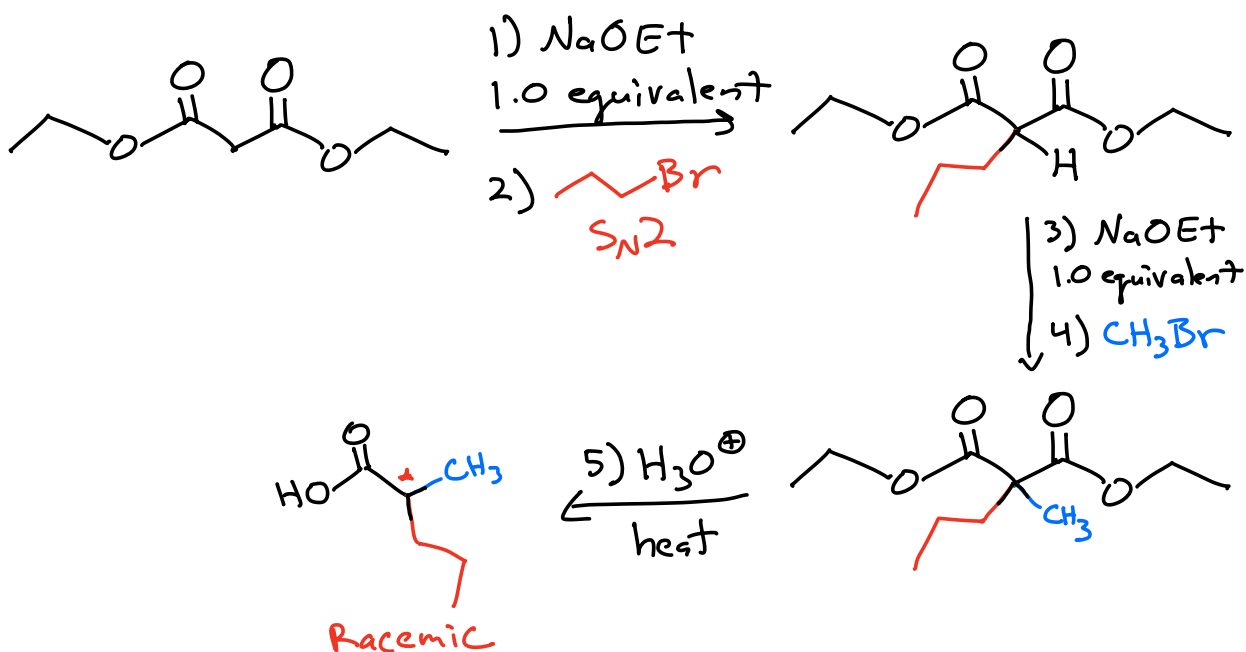


KRE \rightarrow A carboxylic acid with a new C-C bond between the α and β carbon atoms

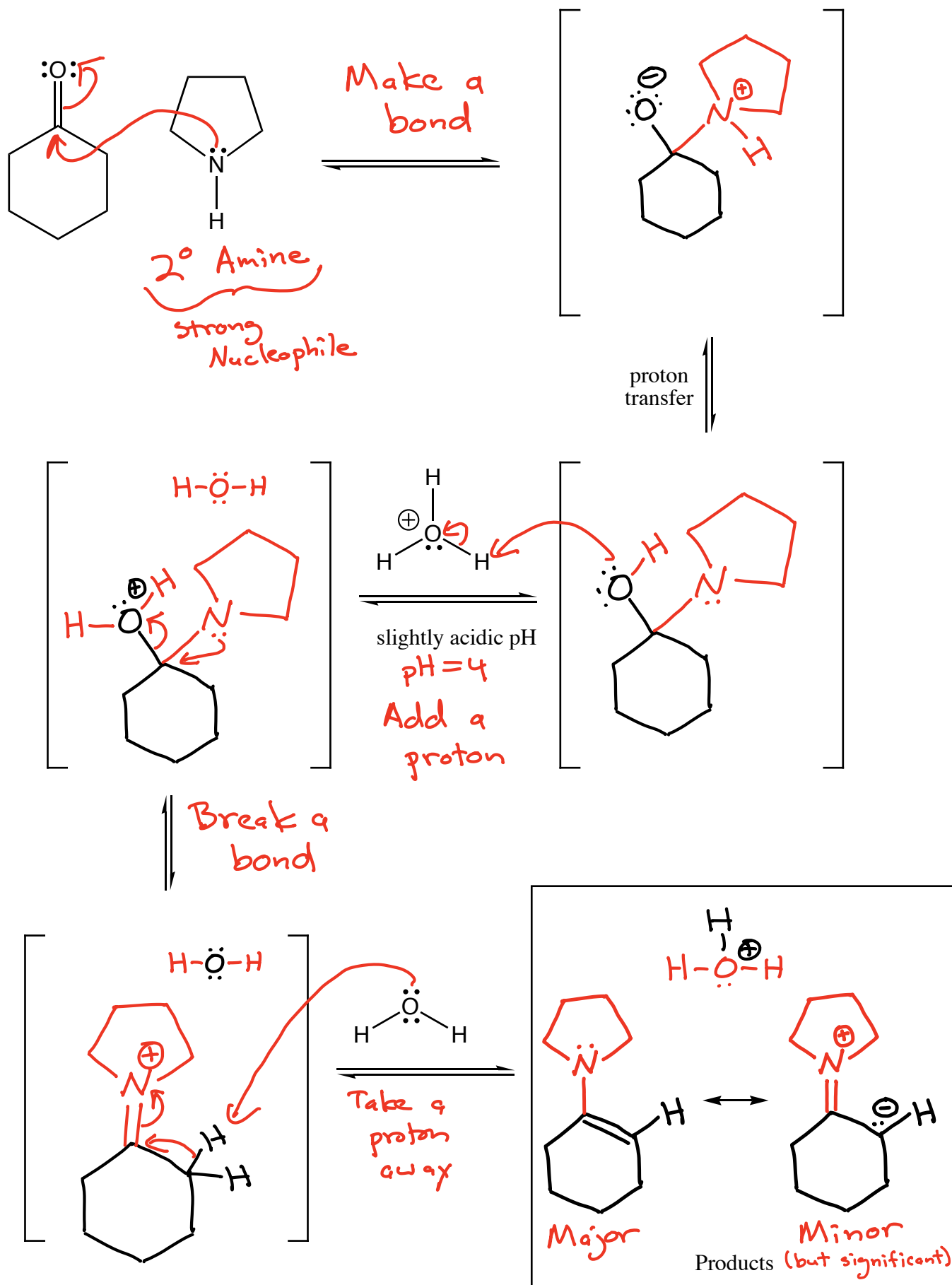
CH_3Br
 CH_3I

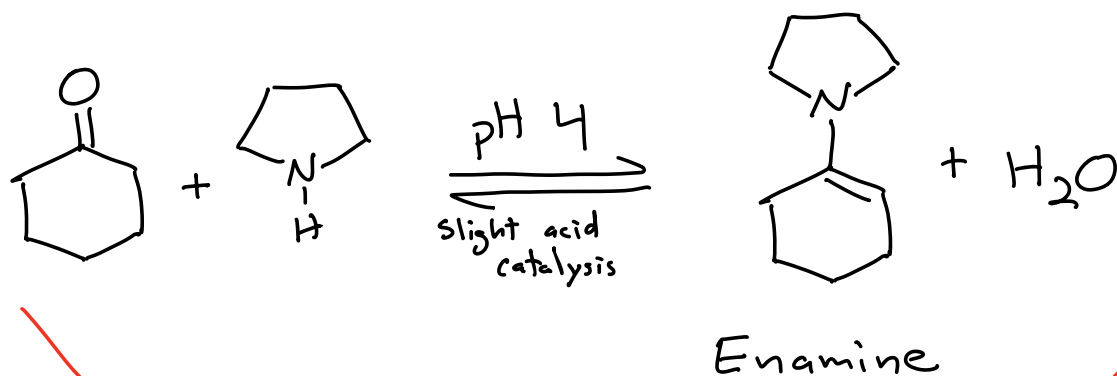
These are so small they can react with enolates that are already substituted — applies to acetoester and malonic ester syntheses

Any group that is larger cannot react due to steric strain

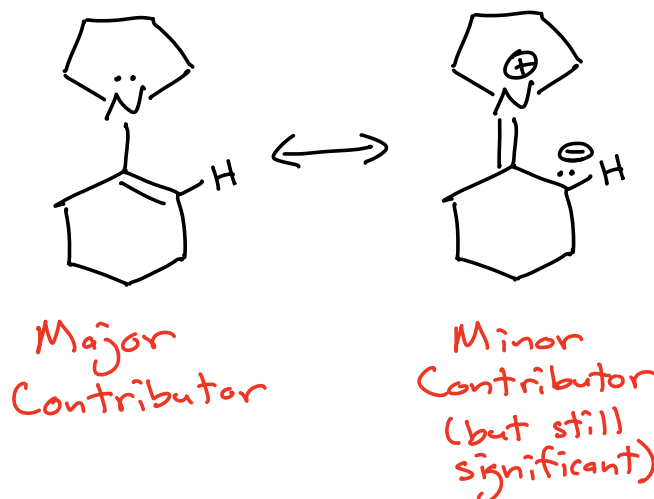


Enamine Formation





This process is reversible \rightarrow adding H_2O drives it to the left (ketone) and taking H_2O away drives it to the right (enamine)



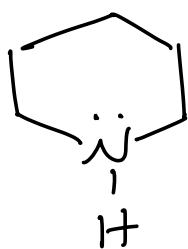
An enamine is a "mini-me" of \Rightarrow an enolate!!

A "smaller" (i.e. less reactive) version of an enolate \Rightarrow α C is a nucleophile!!

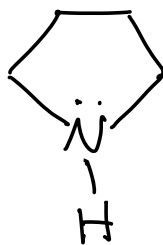
Note the relatively mild conditions used to make the enamine \rightarrow pH 4, no harsh acid or base required.

It takes strong base to make an enolate!

For this class we will only use the following two secondary amines to make an enamine:

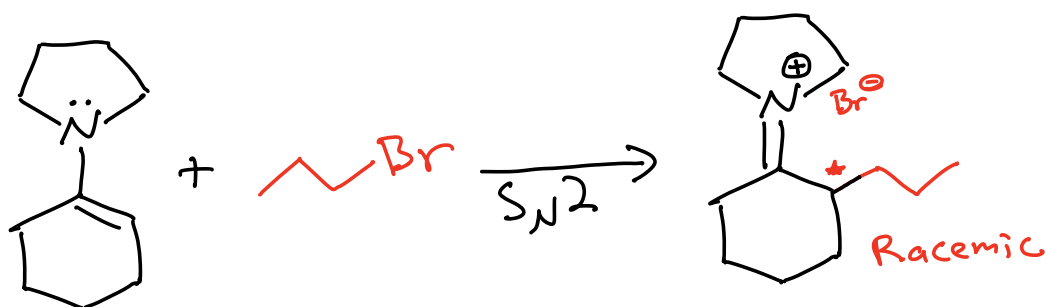


or

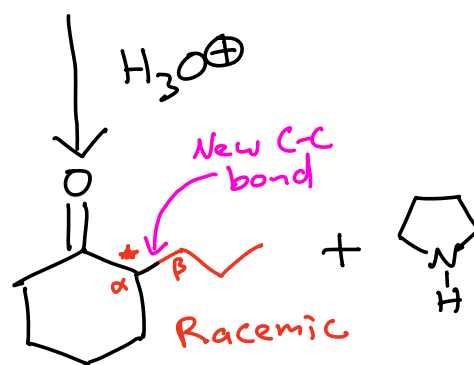


Reactions of enamines

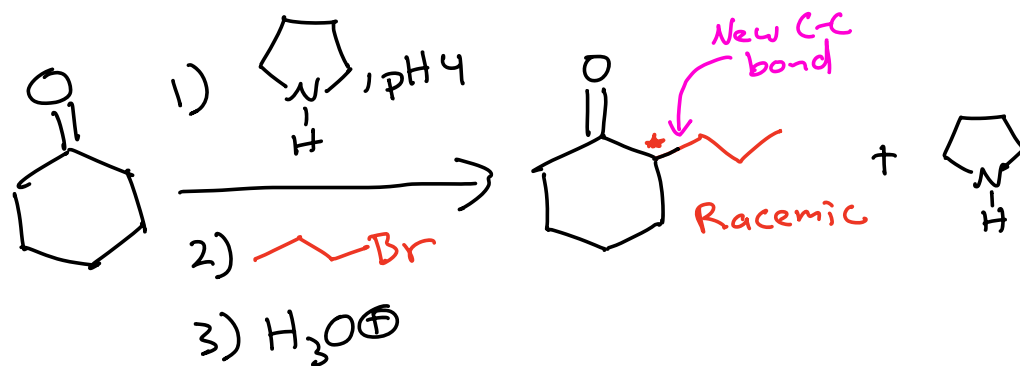
1) Primary haloalkanes (S_N2)



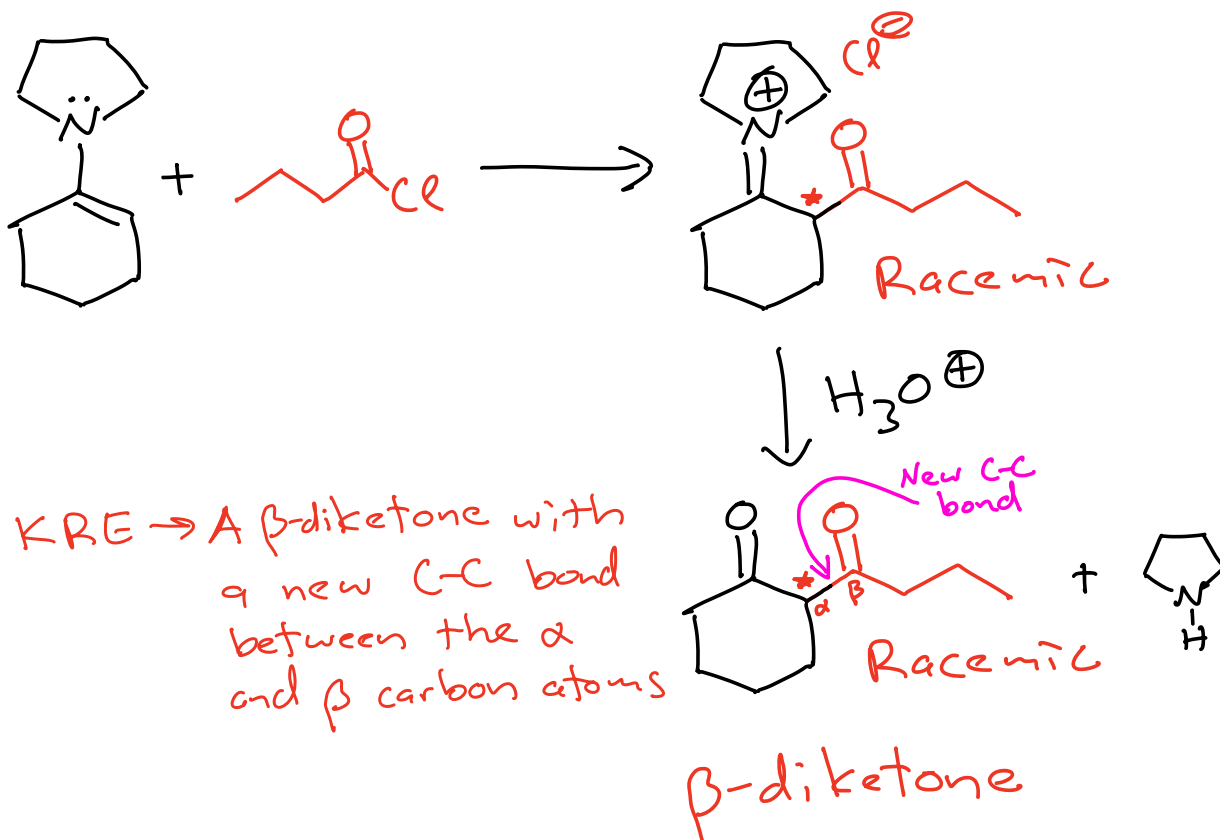
KRE \rightarrow A ketone with a new C-C bond between the α and β carbon atoms



Overall Reaction



2) Acid chlorides \Rightarrow β -diketones



Overall Reaction

