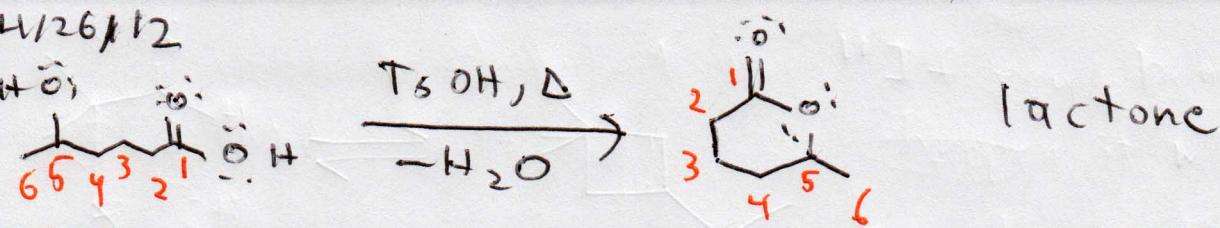


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11

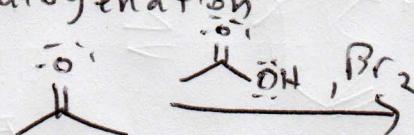


→ Insert α-acidity lecture here

→ Mixed aldol theory is a lab topic

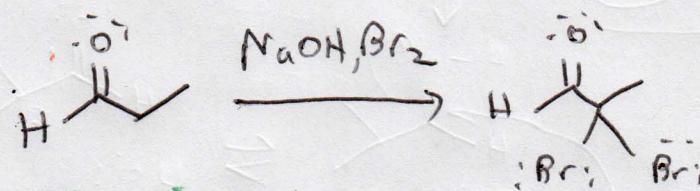
α-halogenation

acid



Under acidic conditions, halogenation only occurs once since the halogen, by withdrawing electron density, makes the intermediate harder to form.

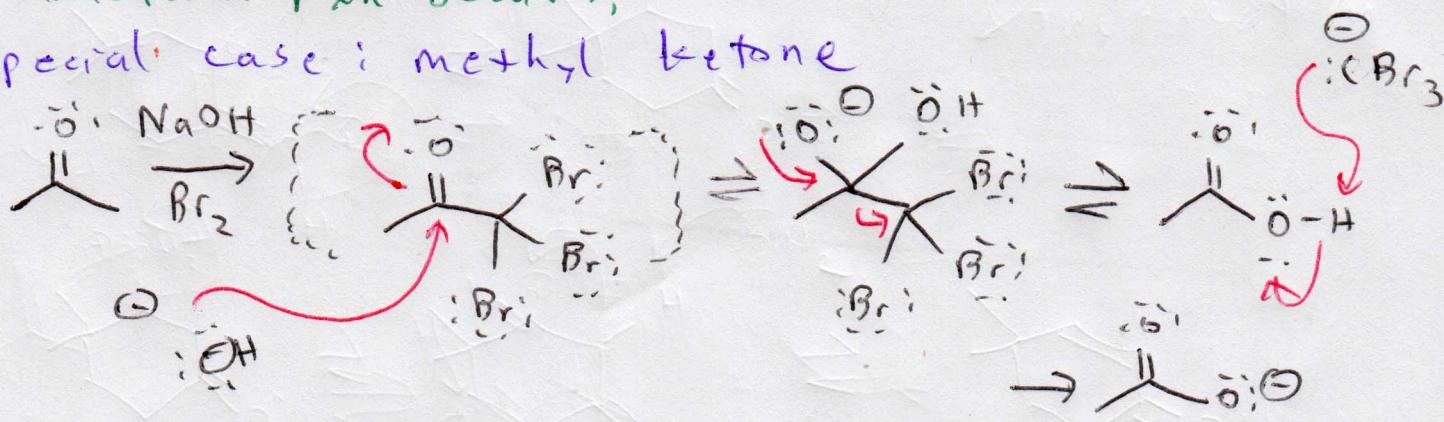
base



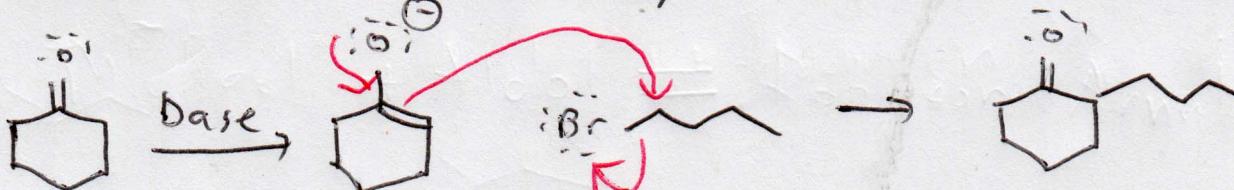
Multiple halogenation occurs since the

inductive effect of bromine increases the acidity of α-protons. Since only two α-protons are present, only two halogens substitute, and no haloform rxn occurs.

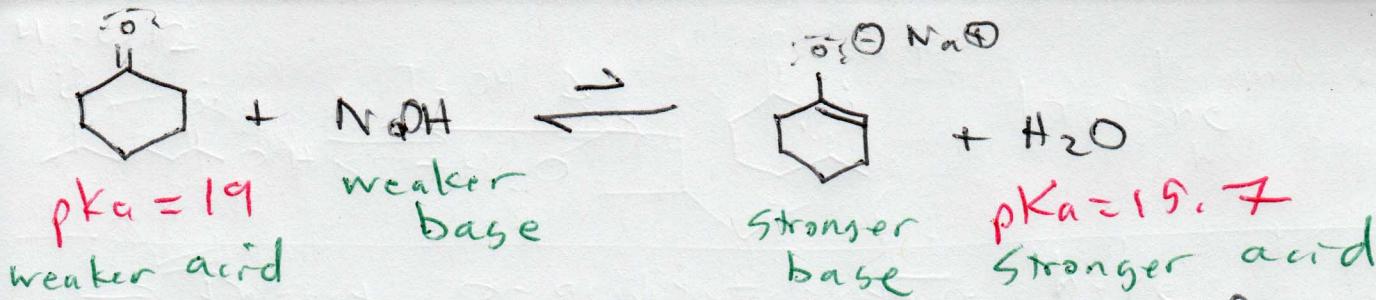
special case: methyl ketone



α-alkylation — base only

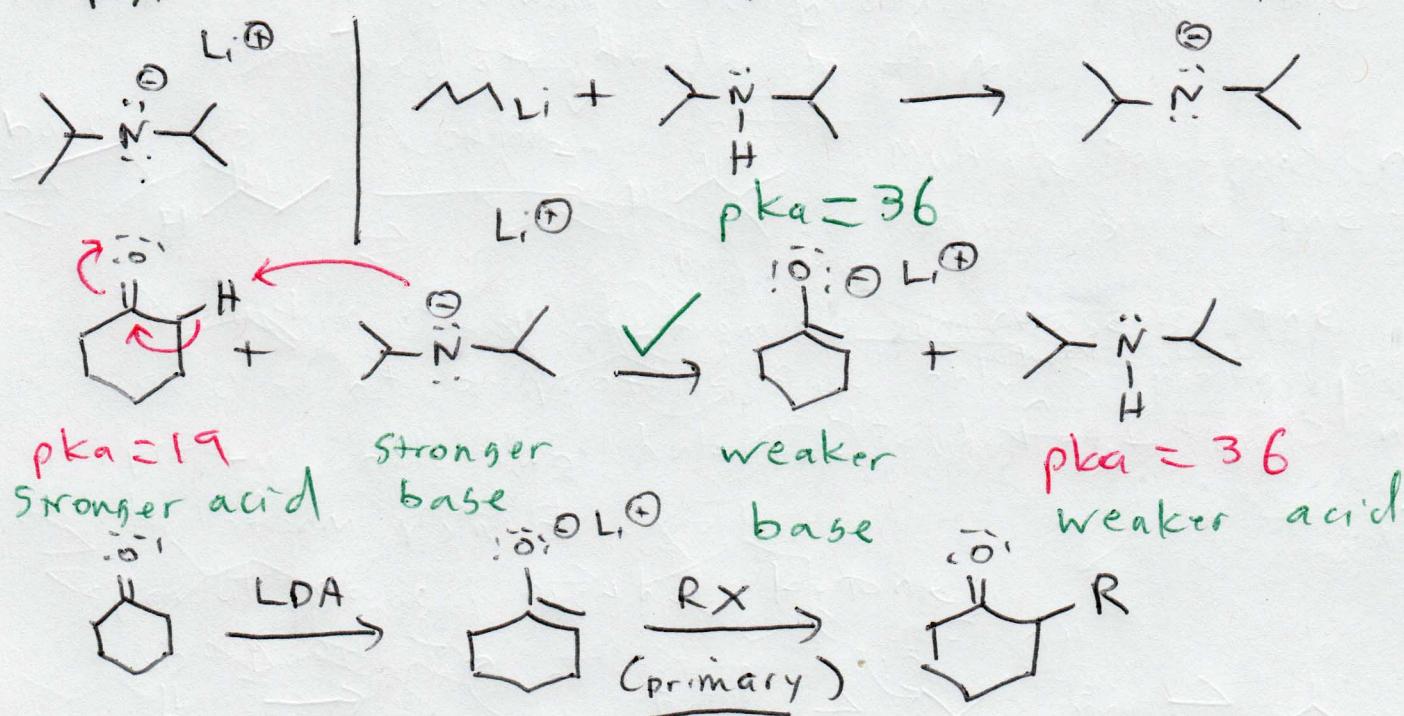


\* Forms a new C-C bond!!

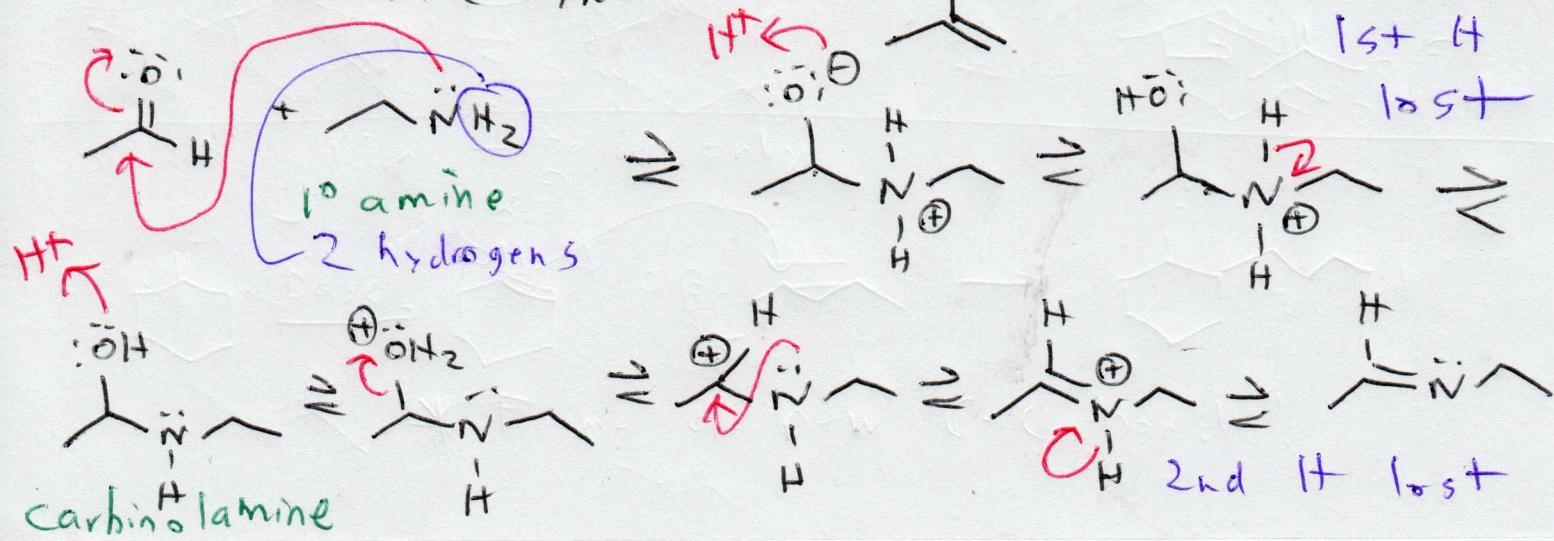


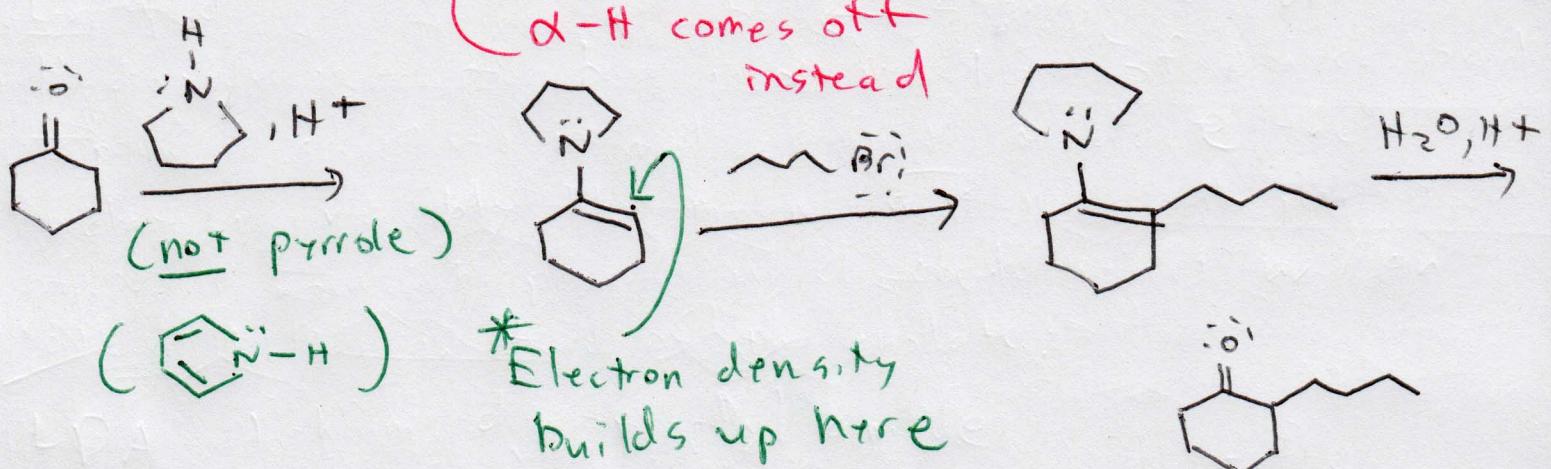
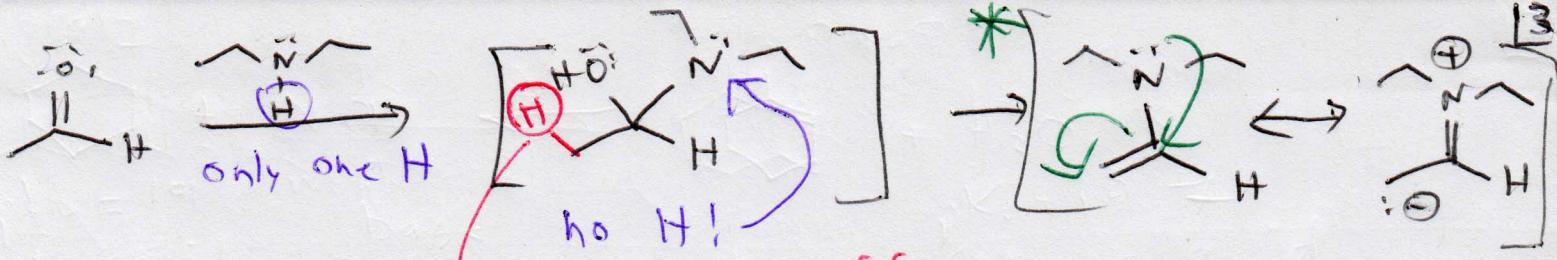
Hydroxide is a poor base in  $\alpha$ -reactions of monocarbonyl compounds since it normally cannot produce the enolate irreversibly. This means a significant proportion of NaOH would be present, which could react w/ an alkyl halide instead of the enolate.

LDA - lithium diisopropyl amide  $\text{Li}^+$

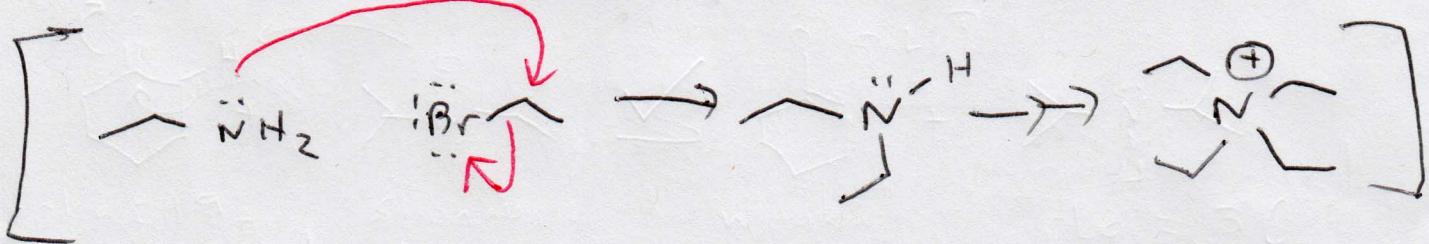


Stork enamine synthesis  $\text{NR}_2$   $\text{R} = \text{H or alkyl}$





The Stork enamine synthesis is useful because no strong bases are used, which allows more sensitive substrates to be used in alkylation.



Claisen

Malonic ester synthesis