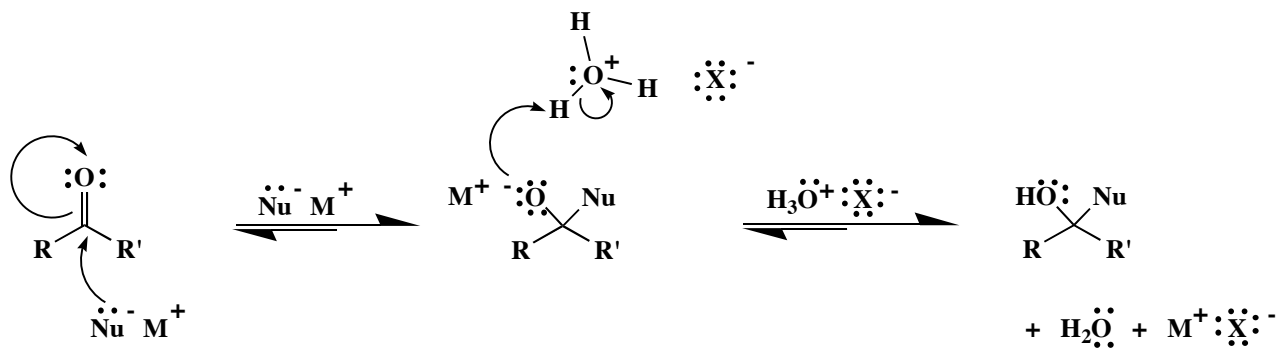
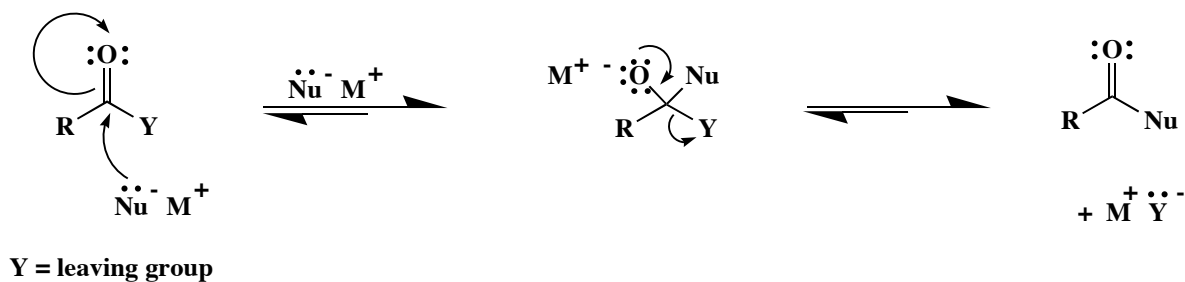


Reactions of Carbonyl Compounds

1. Nucleophilic 1,2-Addition (ketones, aldehydes)



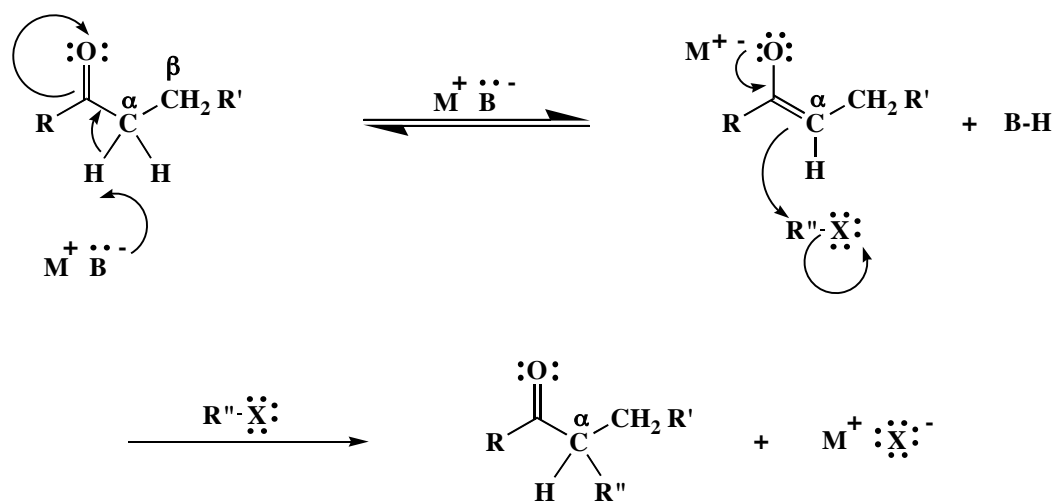
2. Nucleophilic Addition/Elimination (amides, esters, thioesters, acid anhydrides, acid halides)



N.B. The reaction proceeds through a tetrahedral intermediate.
The reaction is not an S_N2 displacement.

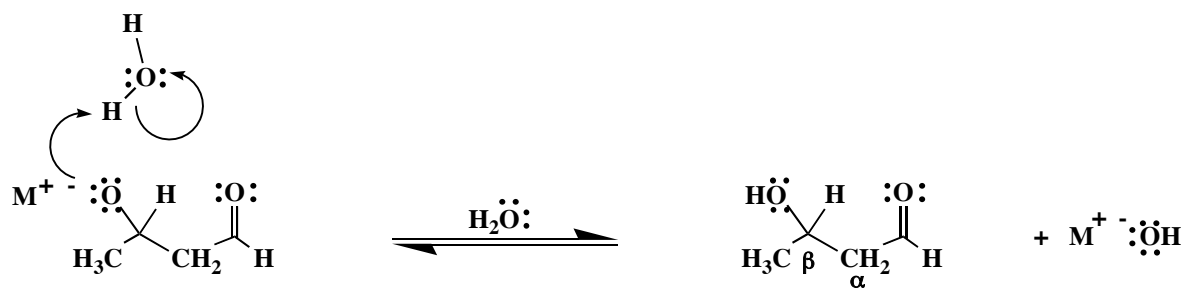
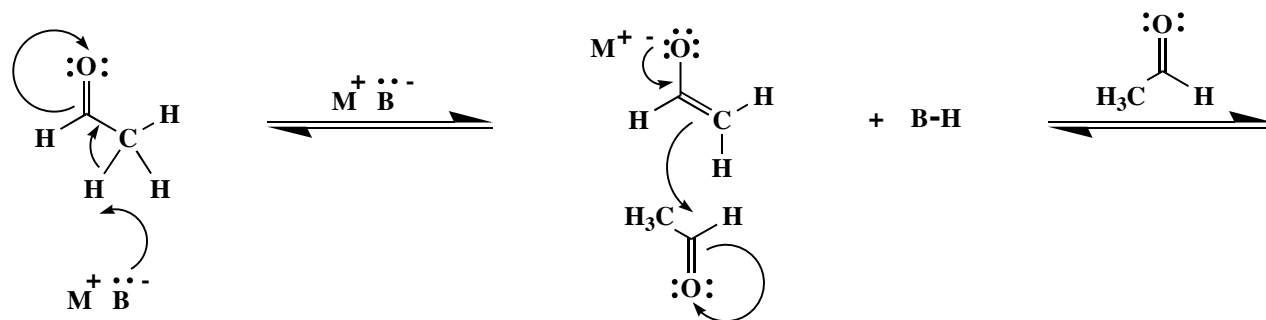
3. Alpha-Substitution

e.g., enolate alkylation



4. Condensation

e.g., aldol condensation



a β -hydroxy aldehyde

5. Nucleophilic 1,4-Addition

