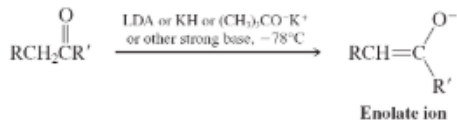


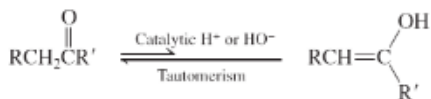
New Reactions

Synthesis and Reactions of Enolates and Enols

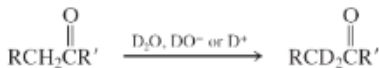
1. Enolate Ions ([Section 18-1](#))



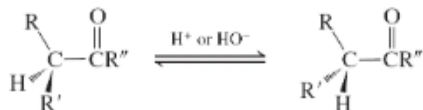
2. Keto–Enol Equilibria ([Section 18-2](#))



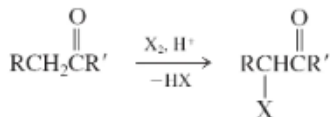
3. Hydrogen–Deuterium Exchange ([Section 18-2](#))



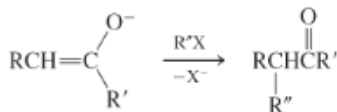
4. Stereoisomerization ([Section 18-2](#))



5. Halogenation ([Section 18-3](#))

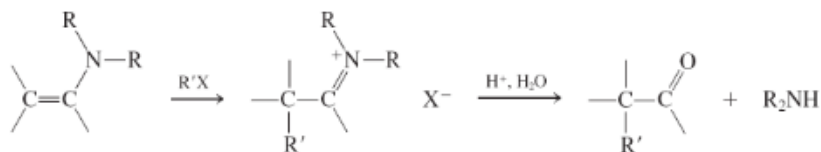


6. Enolate Alkylation ([Section 18-4](#))



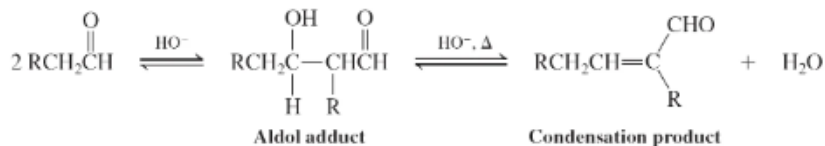
S_N2 reaction: R''X must be methyl or primary halide

7. Enamine Alkylation ([Section 18-4](#))

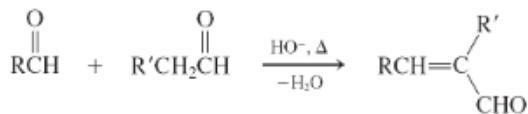


$\text{S}_{\text{N}}2$ reaction: $\text{R}'\text{X}$ must be methyl, primary, or secondary halide

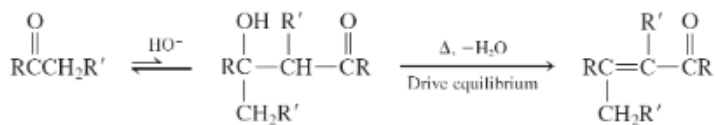
8. Aldol Condensations ([Sections 18-5](#) through [18-7](#))



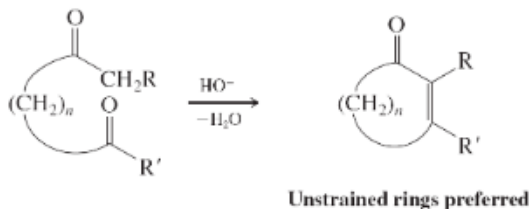
Crossed aldol condensation (one aldehyde not enolizable)



Ketones

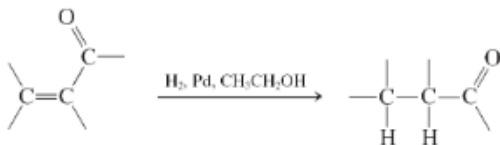


Intramolecular aldol condensation

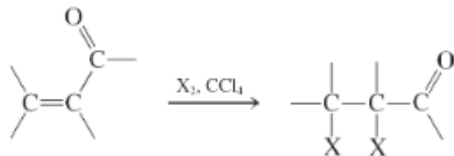


Reactions of α,β -Unsaturated Aldehydes and Ketones

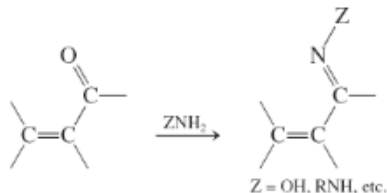
9. Hydrogenation ([Section 18-8](#))



10. Addition of Halogen ([Section 18-8](#))

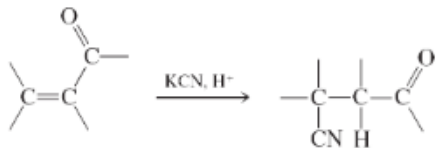


11. Condensations with Amine Derivatives ([Section 18-8](#))

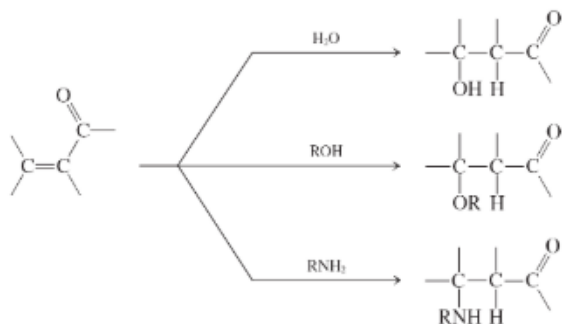


Conjugate Additions to α,β -Unsaturated Aldehydes and Ketones

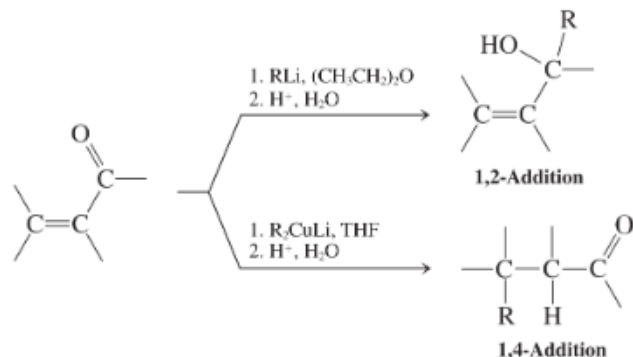
12. Hydrogen Cyanide Addition ([Section 18-9](#))



13. Water, Alcohols, Amines ([Section 18-9](#))

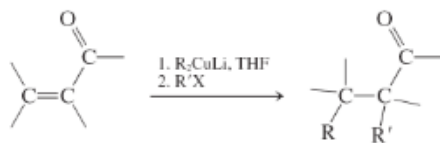


14. Organometallic Reagents ([Section 18-10](#))

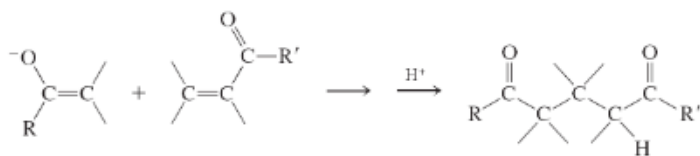


Additions of RMgX may be 1,2 or 1,4, depending on reagent and substrate structure.

Cuprate additions followed by enolate alkylations



15. Michael Addition ([Section 18-11](#))



16. Robinson Annulation ([Section 18-11](#))

