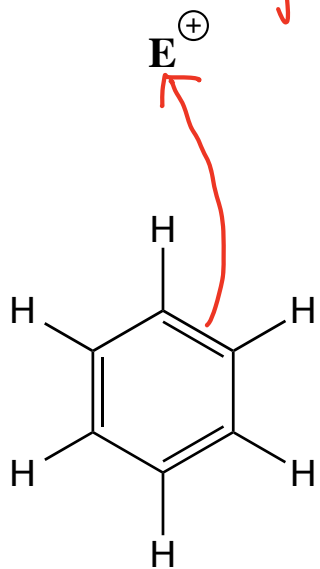
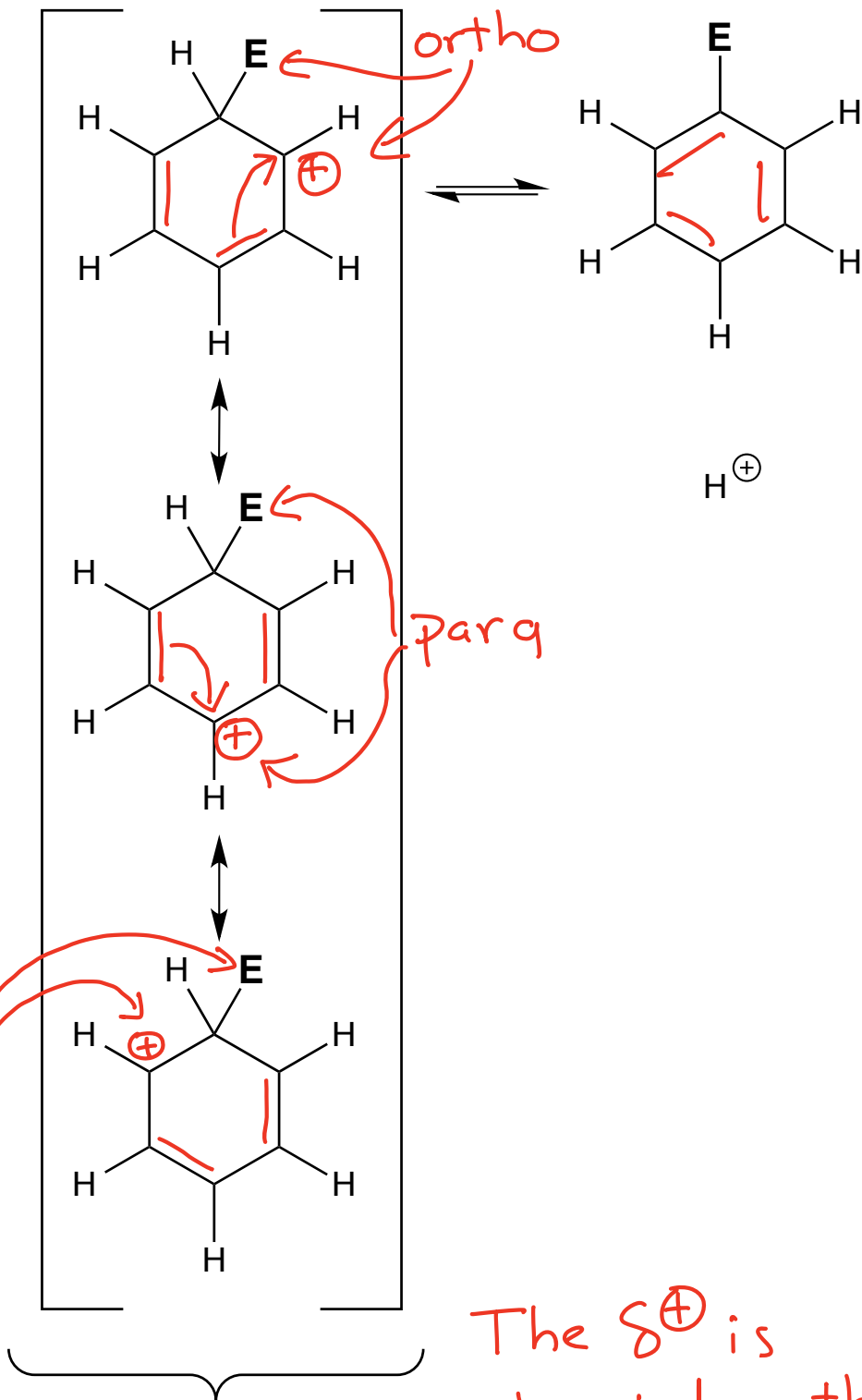
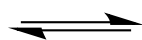


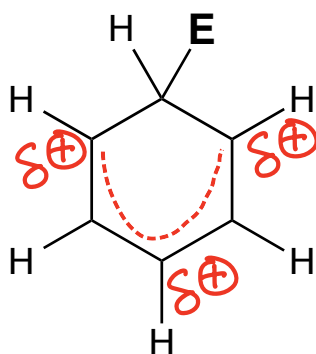
Wicked Strong Electrophile



Weak Nucleophile



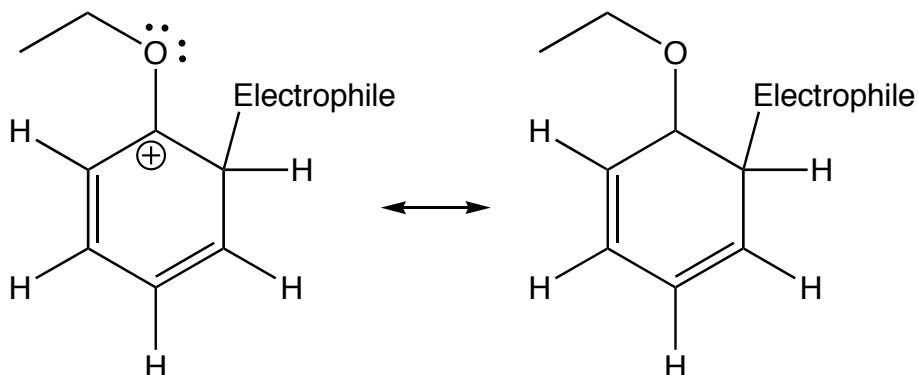
Called the Arenium Ion



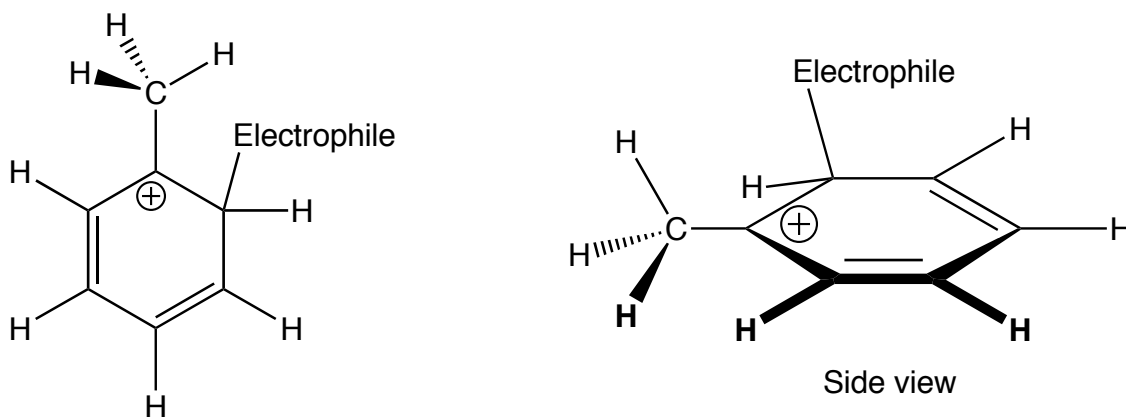
The δ^+ is located ortho and para to where the new bond to "E" is located

Arenium ion *stabilizing* interactions

A) **Pi donation**, a resonance effect for atoms with lone pairs attached to the ring

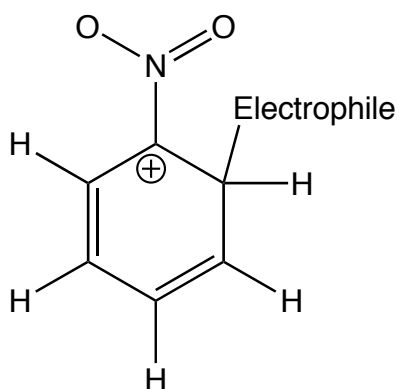



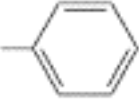
B) **Hyperconjugation** for alkyl groups attached to the ring



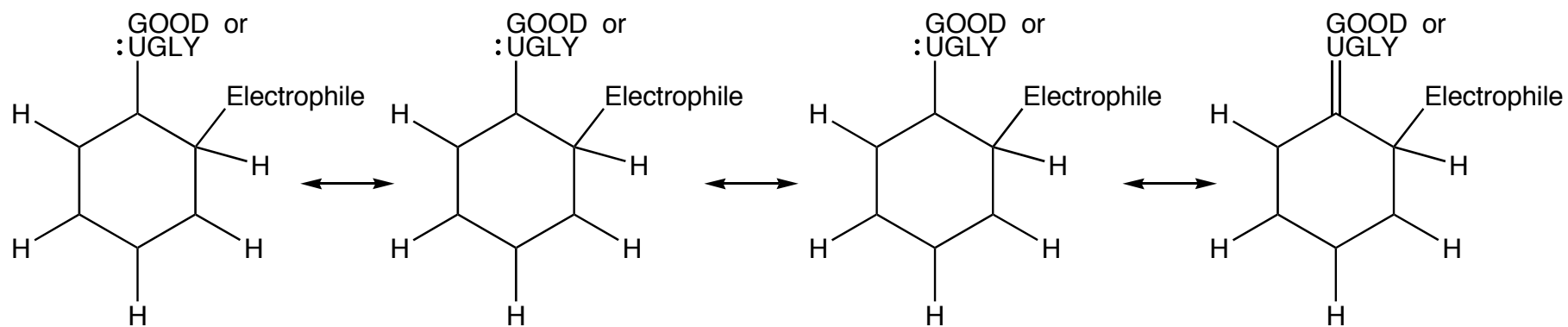
Arenium ion *destabilizing* interaction

A) **Inductive effect** of electronegative atoms or groups attached to the ring

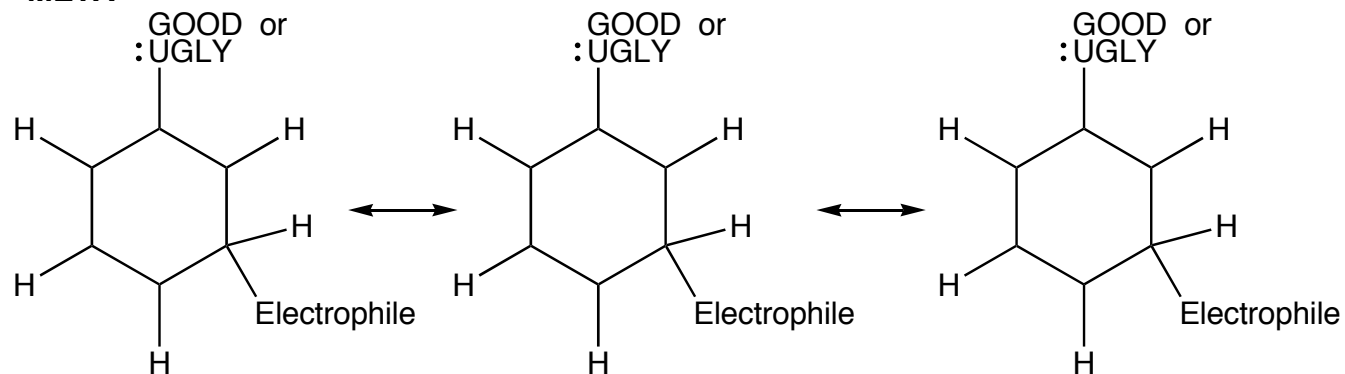


Ortho-Para Directing	Strongly activating	$-\ddot{\text{N}}\text{H}_2$ $-\ddot{\text{N}}\text{HR}$ $-\ddot{\text{N}}\text{R}_2$ $-\ddot{\text{O}}\text{H}$ $-\ddot{\text{O}}\text{R}$		
	Moderately activating	$-\ddot{\text{N}}\text{H}\overset{\text{O}}{\parallel}\text{CR}$ $-\ddot{\text{N}}\text{H}\overset{\text{O}}{\parallel}\text{CAr}$ $-\ddot{\text{O}}\overset{\text{O}}{\parallel}\text{CR}$ $-\ddot{\text{O}}\overset{\text{O}}{\parallel}\text{CAr}$		GOOD
	Weakly activating	$-\text{R}$ 		
	Weakly deactivating	$-\ddot{\text{F}}:$ $-\ddot{\text{Cl}}:$ $-\ddot{\text{Br}}:$ $-\ddot{\text{I}}:$		UGLY
Meta Directing	Moderately deactivating	$-\overset{\text{O}}{\parallel}\text{CH}$ $-\overset{\text{O}}{\parallel}\text{CR}$ $-\overset{\text{O}}{\parallel}\text{COH}$ $-\overset{\text{O}}{\parallel}\text{COR}$ $-\overset{\text{O}}{\parallel}\text{CNH}_2$ $-\overset{\text{O}}{\parallel}\text{SOH}$ $-\text{C}\equiv\text{N}$	BAD	
	Strongly deactivating	$-\text{NO}_2$ $-\text{NH}_3^+$ $-\text{CF}_3$ $-\text{CCl}_3$		

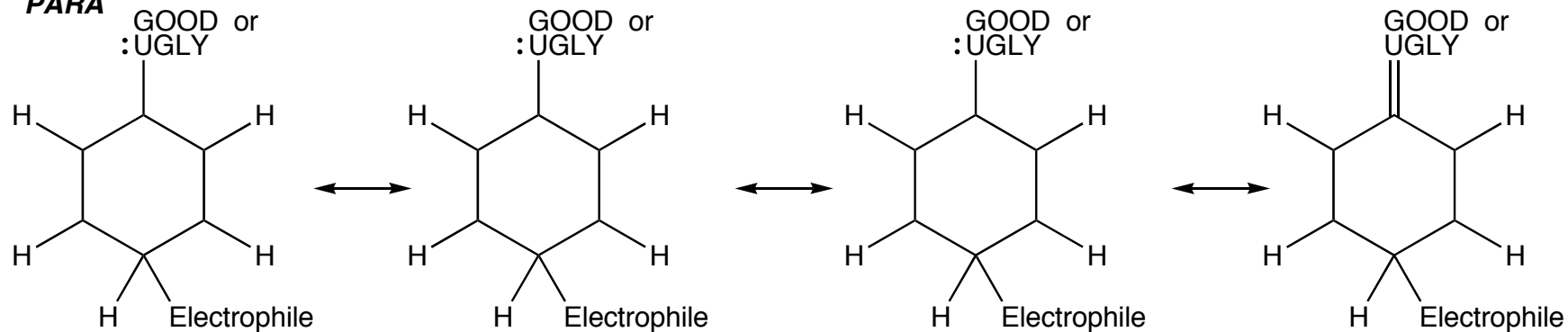
ORTHO



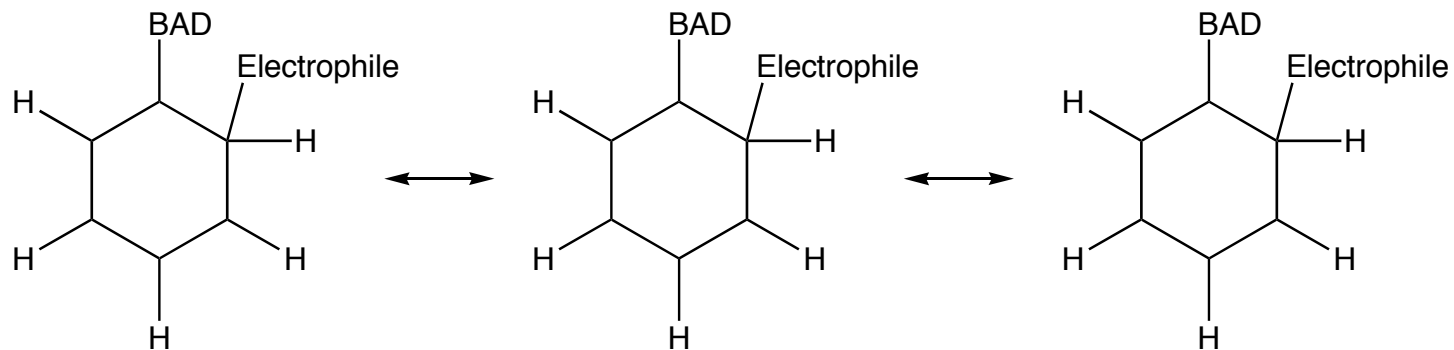
META



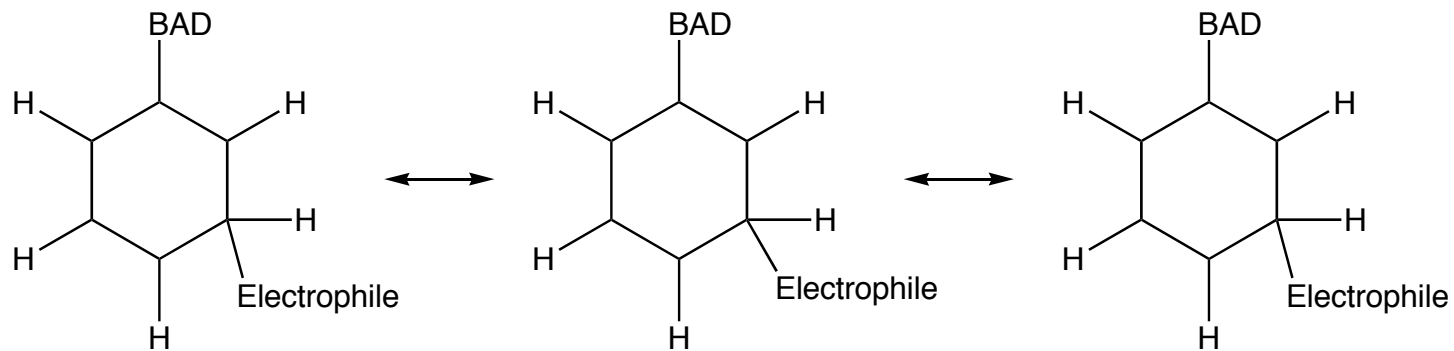
PARA



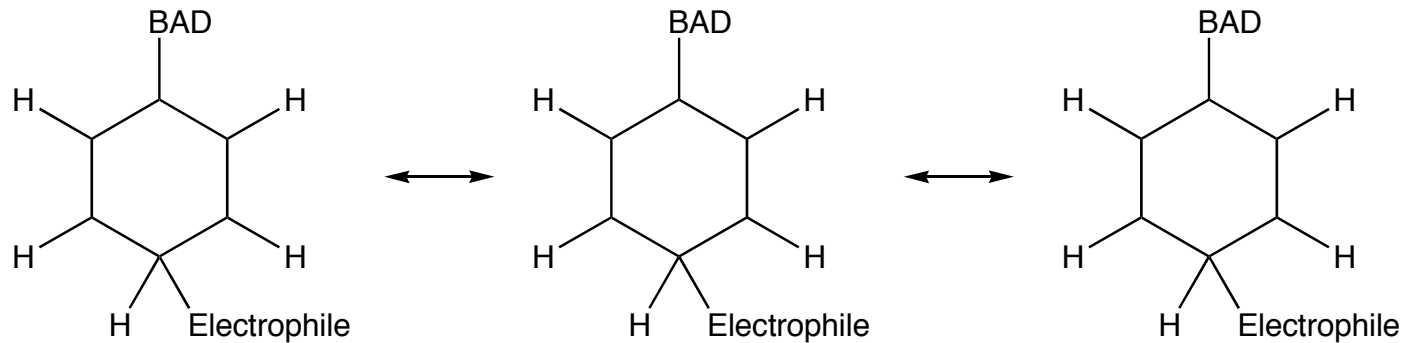
ORTHO

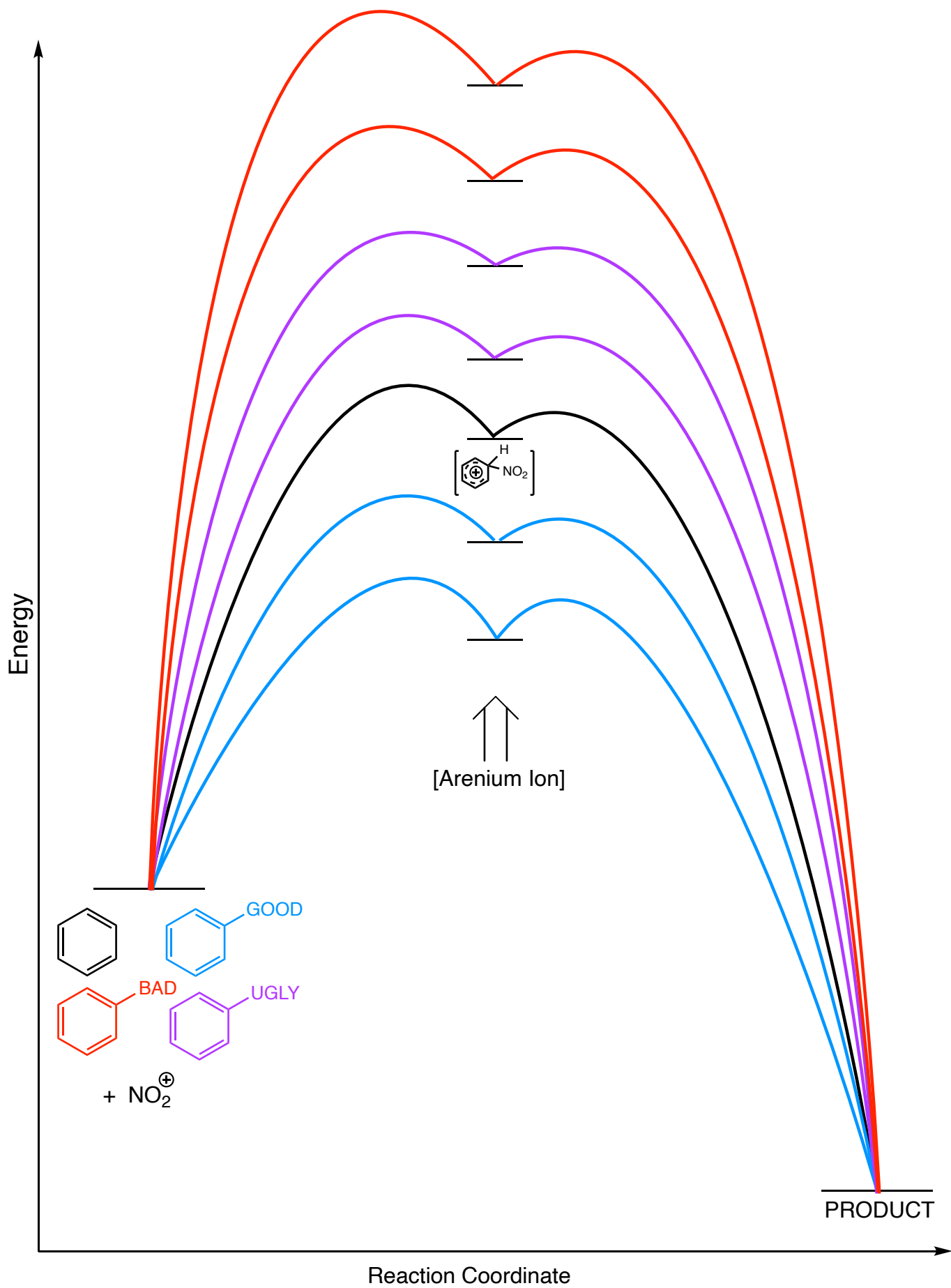


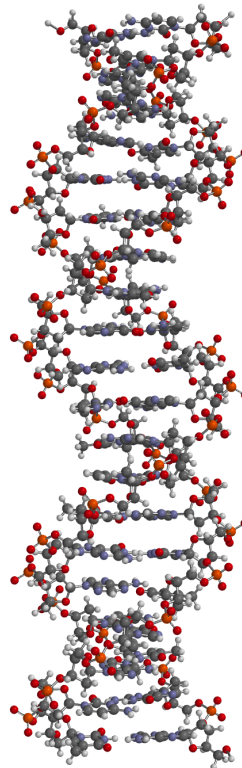
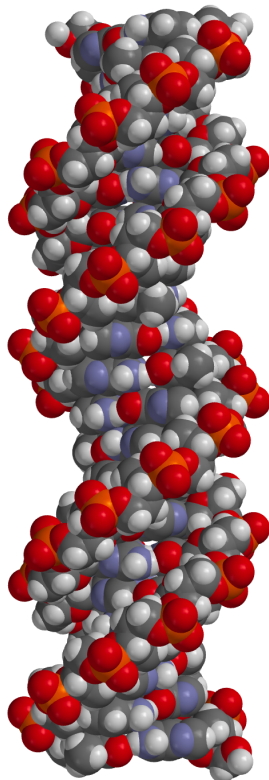
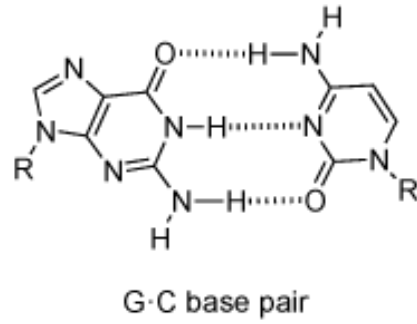
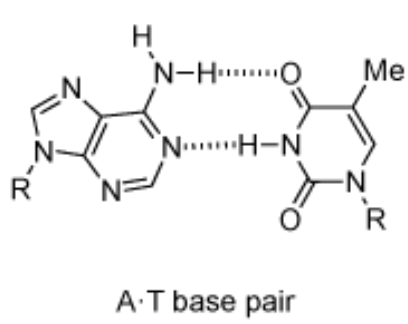
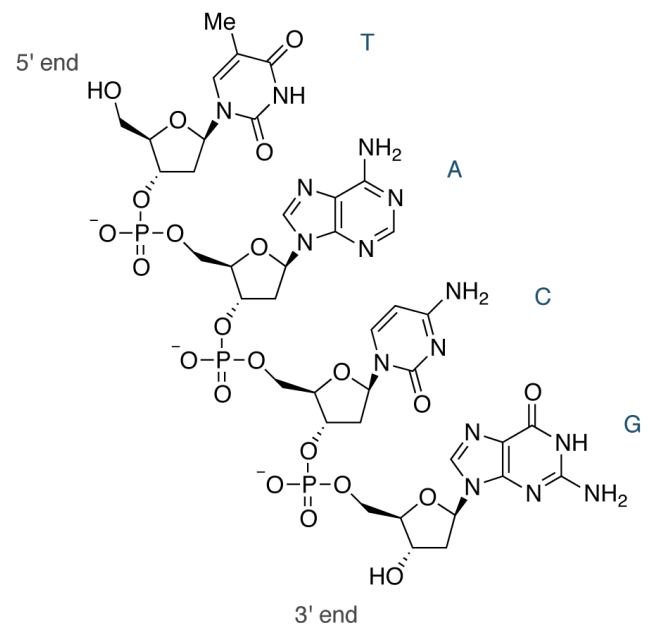
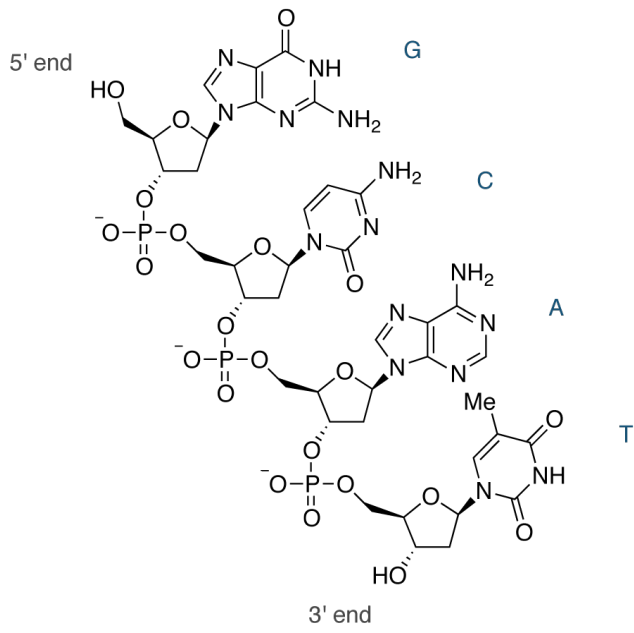
META



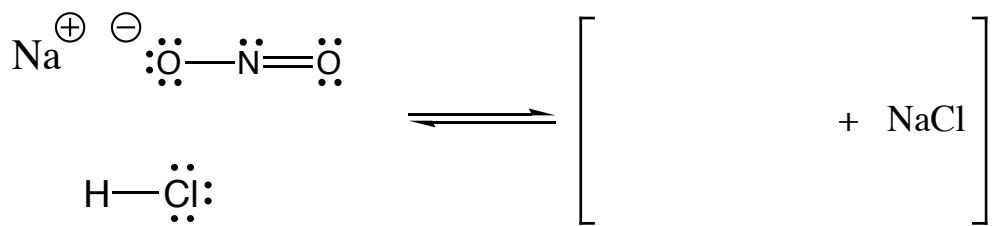
PARA



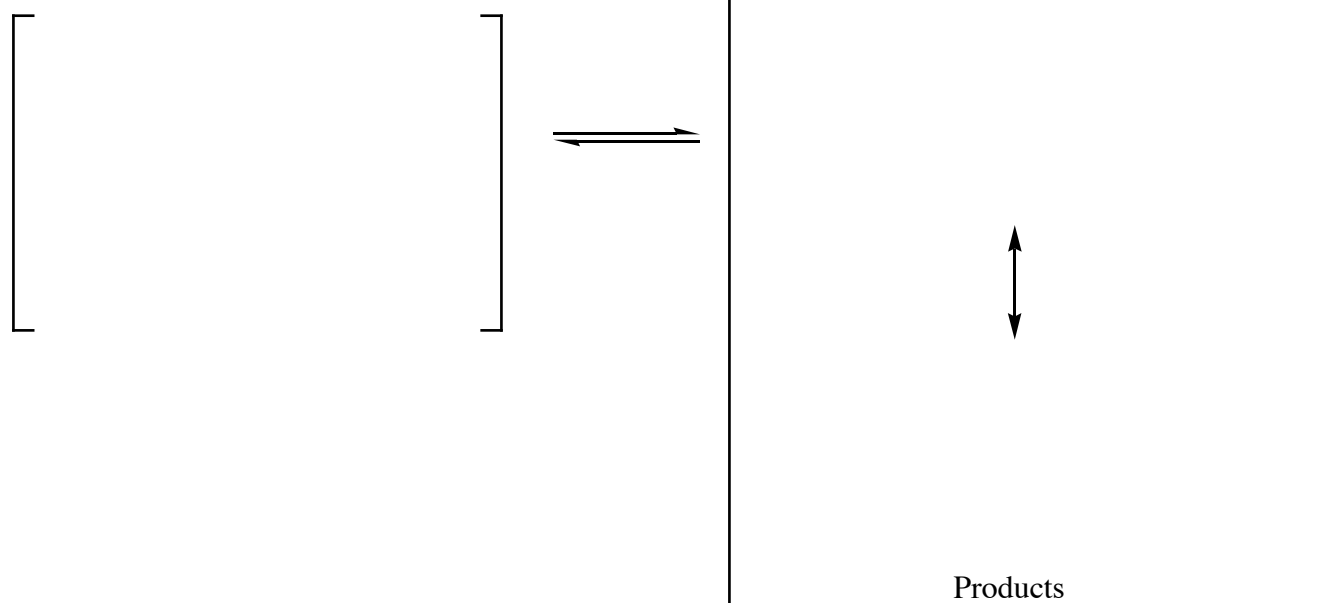
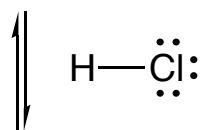
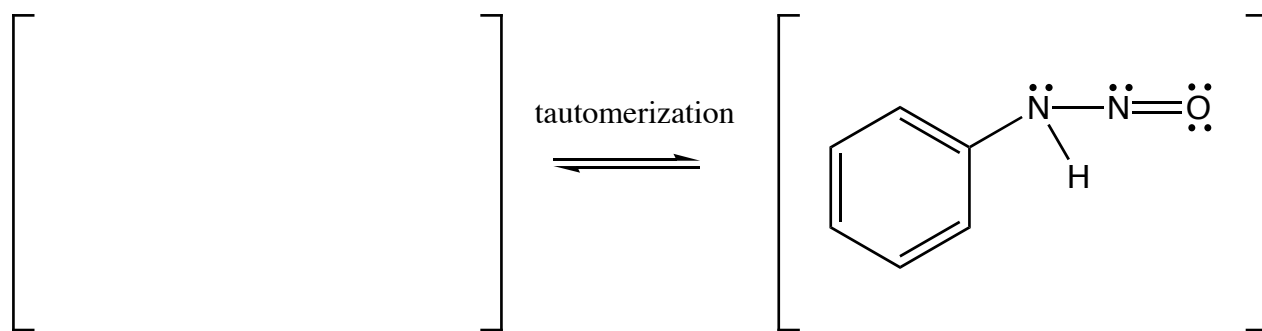
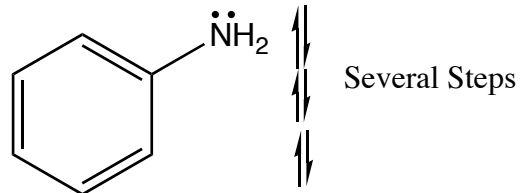


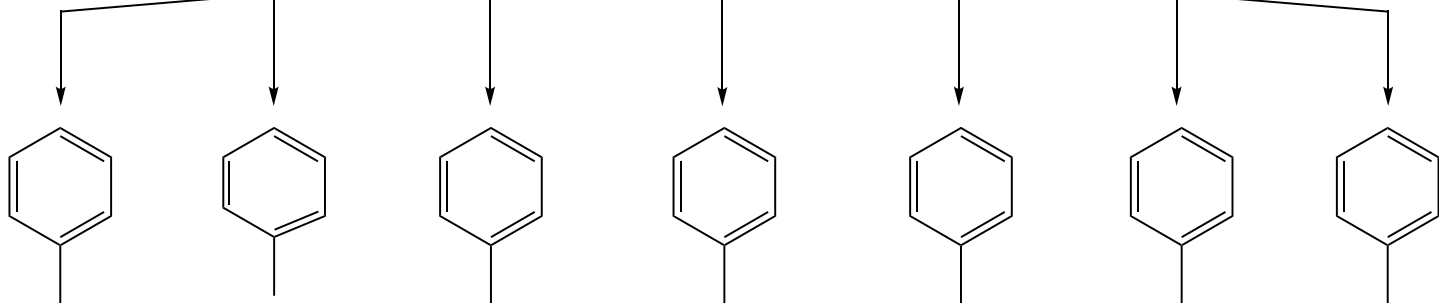
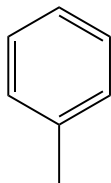
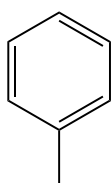
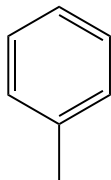
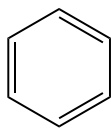


Preparation of Diazoniums, The "Mr. Bill" Reaction

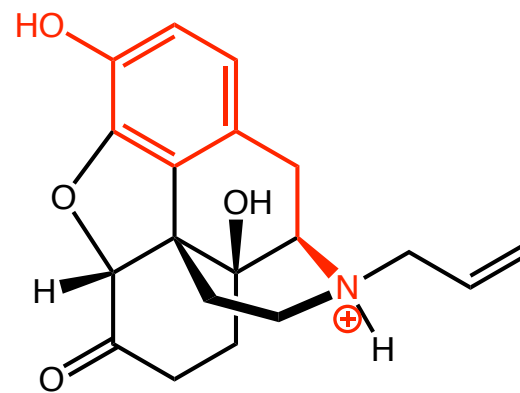
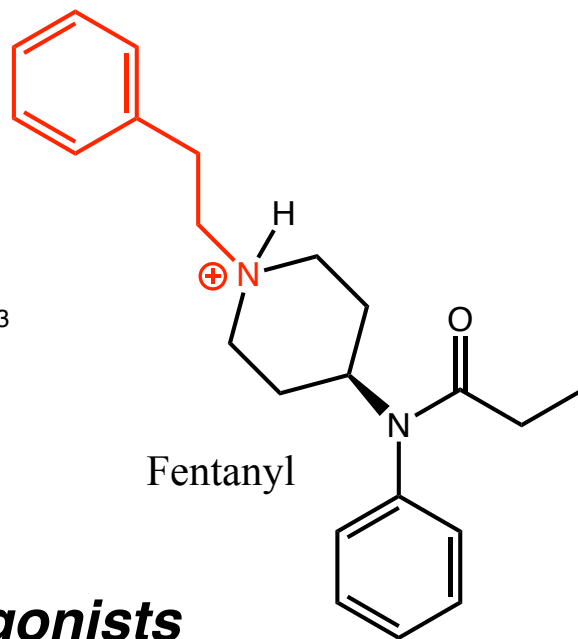
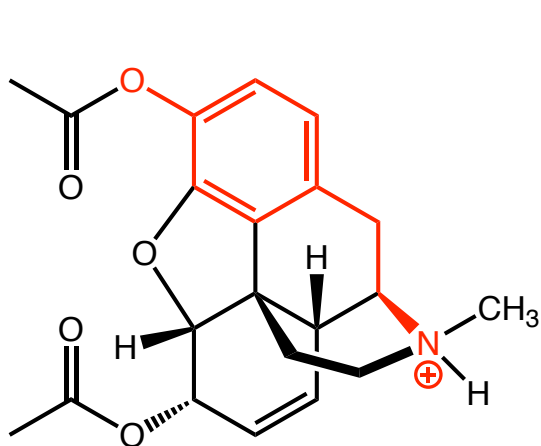
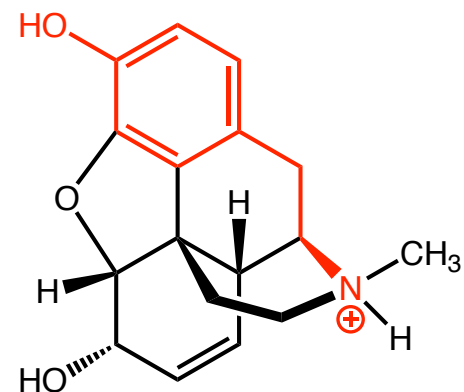
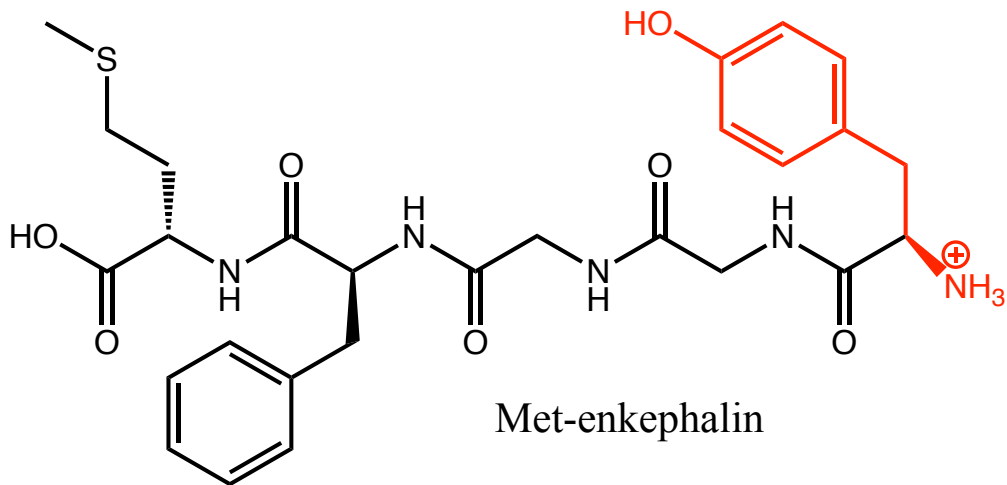


The Mr. Bill reagent





Sandmeyer Reaction



Mu-Receptor Agonists

Antagonist

Table 25.1 Configurational Relationships Among the Isomeric D-Aldotetroses, D-Aldopentoses, and D-Aldohexoses

