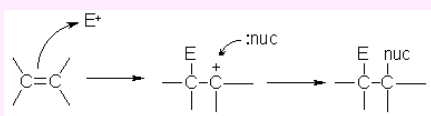


Reactants & Solvents / Catalysts

Br ₂ (X ₂)	Halogenation
H ₂ & Pd/ Pt	Hydrogenation -> alkane
H ₂ SO ₄ , H ₂ O	Acid-catalyzed hydration to form alcohol
HBr (HCl, HI)	Hydrohalogenation -> haloalkane
Peroxides (ROOR)	Form anti-Markovnikov
BH ₃ , H ₂ O ₂ , NaOH	Hydroboration-oxidation; anti-Mark. for specific regiochemistry
Hg(OAc) ₂ , H ₂ O	Mark. with no rearrangement

Basic Reaction



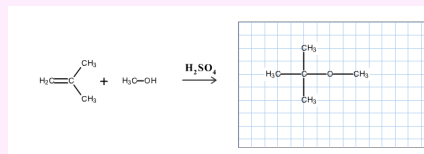
1. Pi electrons attack electrophile
2. Carbocation formation
3. Nucleophilic attack

Catalytic Hydrogenation (Reduction)

Addition of H₂ across double bond in presence of metal catalyst (ex. Pt)
syn addition

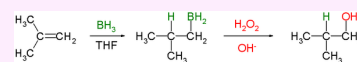
Dihydroxylation

Acid-Catalyzed hydration



- Electrophilic addition
- Creates an ether or alcohol (in water)

Hydroboration-oxidation

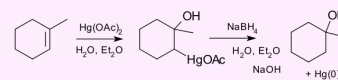


- Anti-Markovnikov product
- 2-step, *syn addition*

HBr + Peroxides

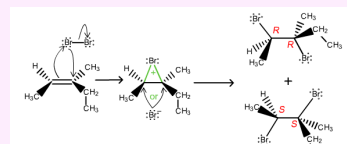
anti markovnikov addition

Oxymercuration-Demercuration (Hydration)



- Markov. Product without rearrangement. (No carbocation)
- If in water, Alcohol forms
 - If in methanol, ether forms
 - anti - arrangement

Halogenation



- Halogens added to the carbons of double bond
- anti addition*