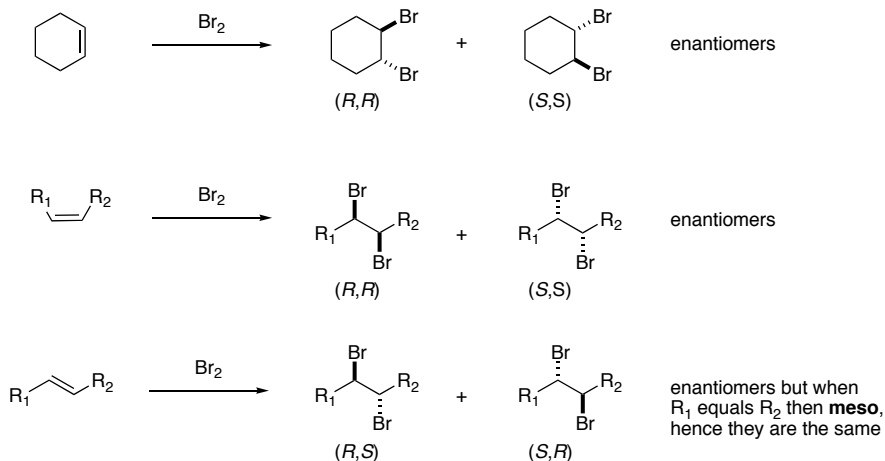
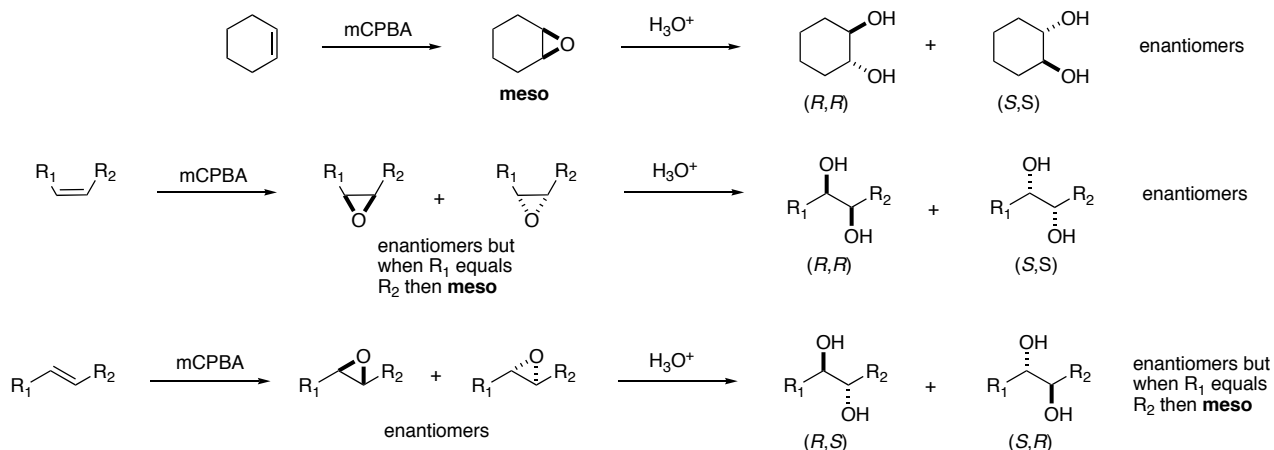


## Reactions of Alkenes: Stereochemistry of addition

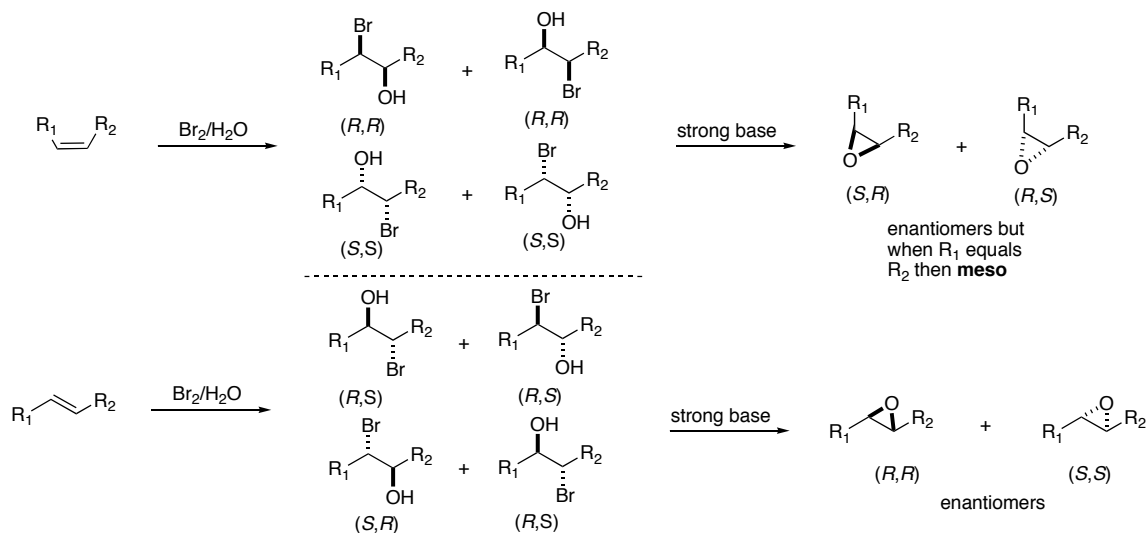
### 1) *anti*-addition



### 2) *anti*-addition

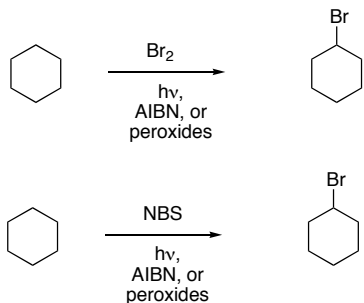


### 3) *anti/anti* = Net *syn*-addition

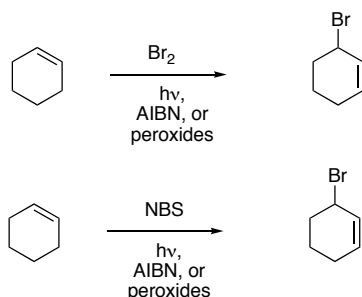


## Reactions of Alkenes

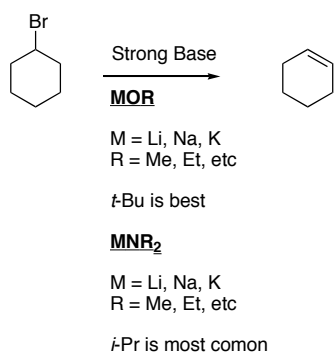
### Radical Bromination



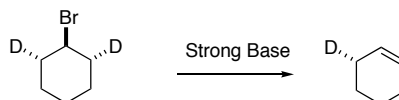
**Chemoselectivity:**  
allylic and benzylic C-H bonds are preferred



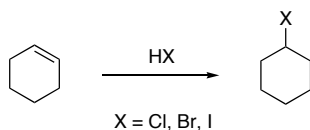
### Dehydrohalogenation



**Stereochemical Aspects of the reaction:**  
Anti-elimination is preferred



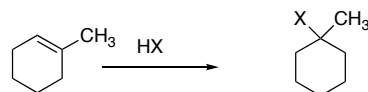
### Addition of HX across an alkene



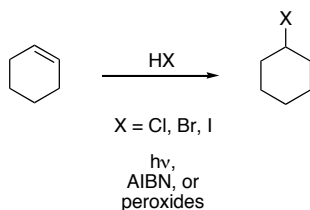
**Stereochemical Aspects of the reaction:**  
addition is stereo-random



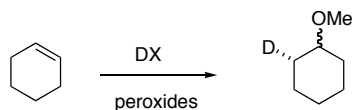
**Regiochemical Aspects of the reaction:**  
Markovnikov addition



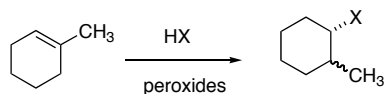
### Addition of HX across an alkene under radical additions



**Stereochemical Aspects of the reaction:**  
addition is stereo-random

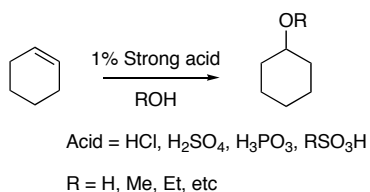


**Regiochemical Aspects of the reaction:**  
anti-Markovnikov addition



## Reactions of Alkenes: continued

### Addition of HX across an alkene in a participating solvent

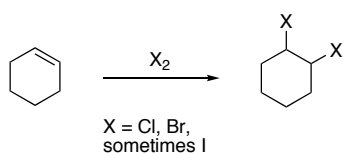


**Stereochemical Aspects of the reaction:**  
addition is stereo-random

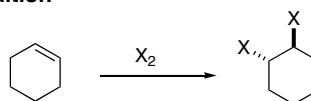


**Regiochemical Aspects of the reaction:**  
Markovnikov addition

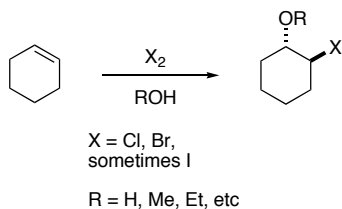
### Addition of X<sub>2</sub> across an alkene



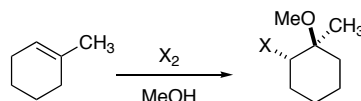
**Stereochemical Aspects of the reaction:**  
anti-addition



### Addition of X<sub>2</sub> across an alkene in a participating solvent

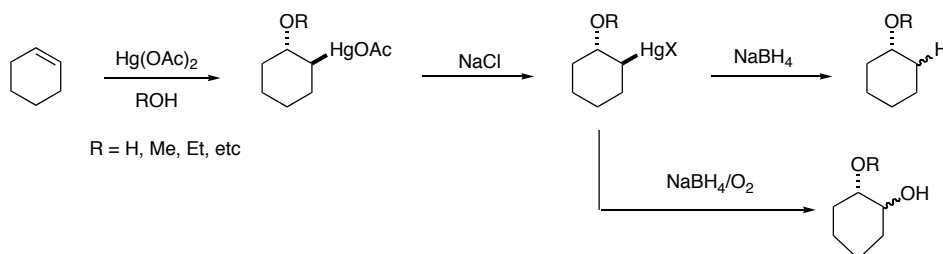


**Stereochemical Aspects of the reaction:**  
anti-addition

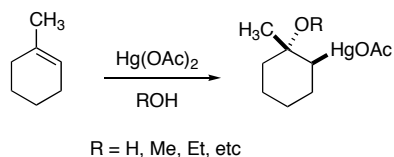


**Regiochemical Aspects of the reaction:**  
Markovnikov addition

### Addition of Hg(OAc)<sub>2</sub> across an alkene in a participating solvent

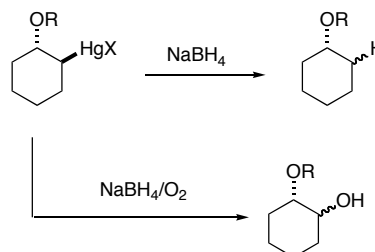


**Stereochemical Aspects of the reaction:**  
First step is an anti-addition



**Regiochemical Aspects of the reaction:**  
Markovnikov addition

**Stereochemical Aspects of the reaction:**  
Second step is stereo-random

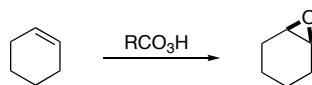


## Reactions of Alkenes: continued (part III)

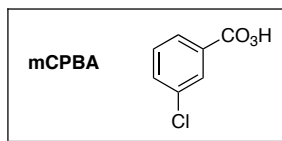
### Oxidations

#### Epoxidation of alkene

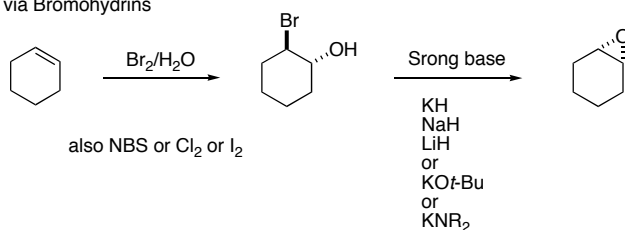
1) Peracids



example (mCPBA)

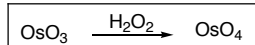
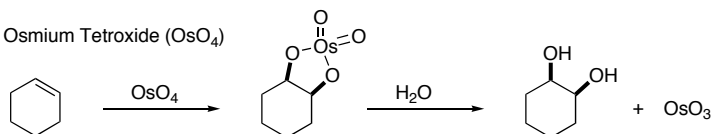


1) via Bromohydrins

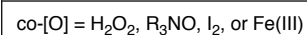
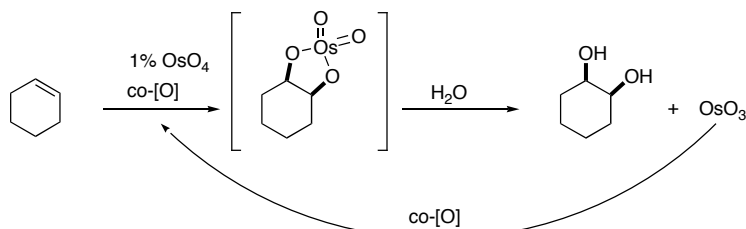


#### Dihydroxylation of alkene

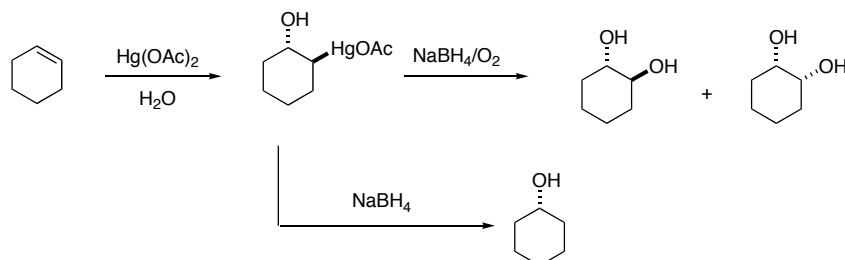
1) Osmium Tetroxide (OsO<sub>4</sub>)



2) catalytic Osmium Tetroxide (OsO<sub>4</sub>) with co-Oxidant



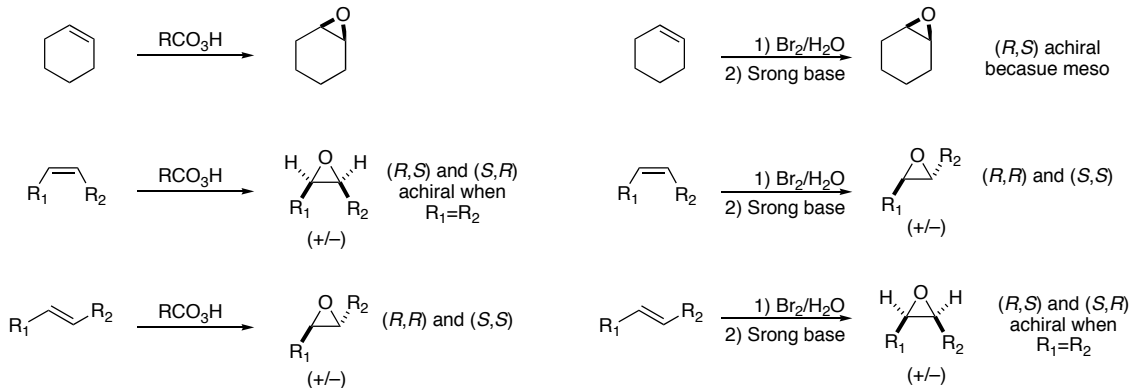
3) diols from Oxamercuration/oxidation



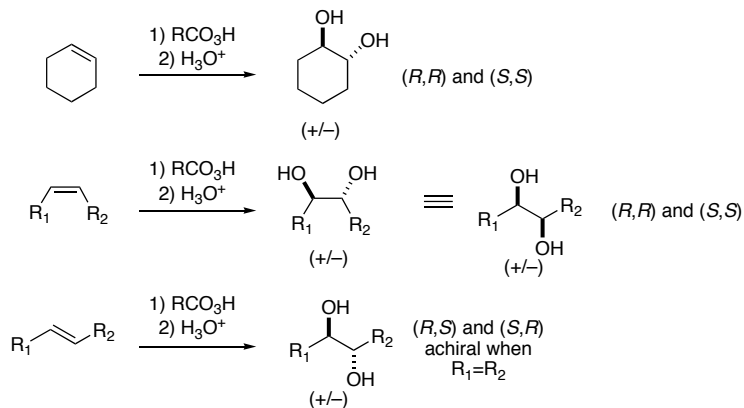
## Reactions of Alkenes: continued (part IV)

### Oxidations

#### Epoxidation of alkenes



#### Epoxidation/hydrolysis of alkenes



#### Dihydroxylation of alkenes

