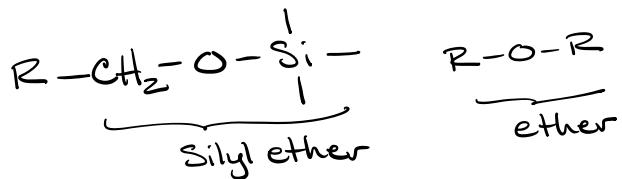
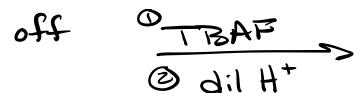
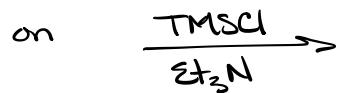


# Alcohol Protecting Groups

## ① Silyl Ethers



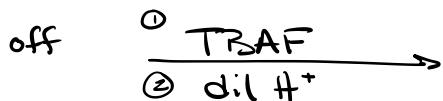
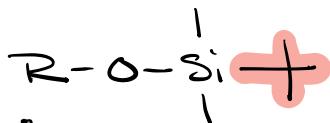
### a) TMS



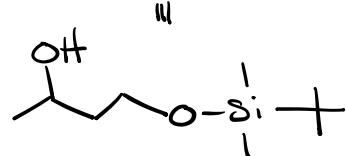
### b) TBDMS

Tertiary-butyl-dimethyl silyl

Steric group  $\Rightarrow$  Selective for  ${}^1\text{ alcohol}$



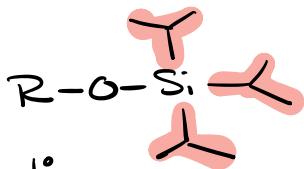
ex



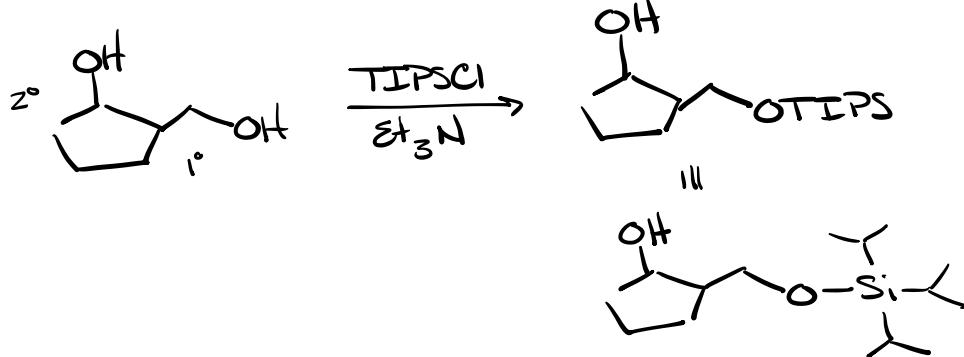
c) **TIPS**

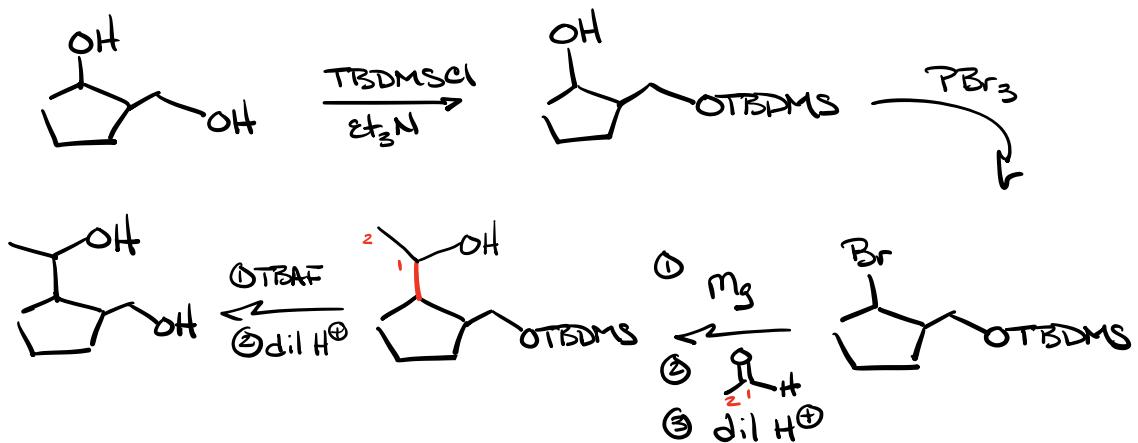
Tri-isopropyl silyl

Steric group selective for 1°



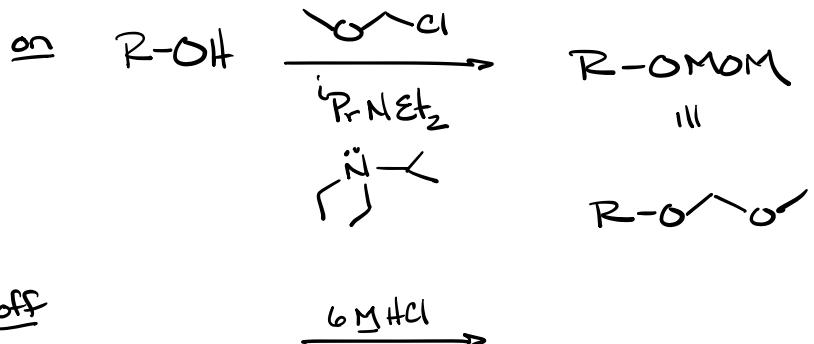
Ex



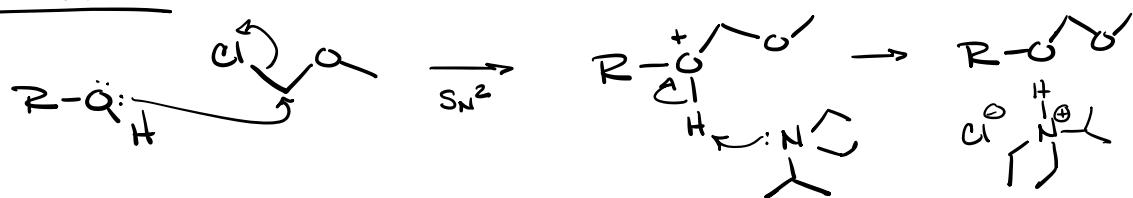


Ether type                           $R-O-R'$

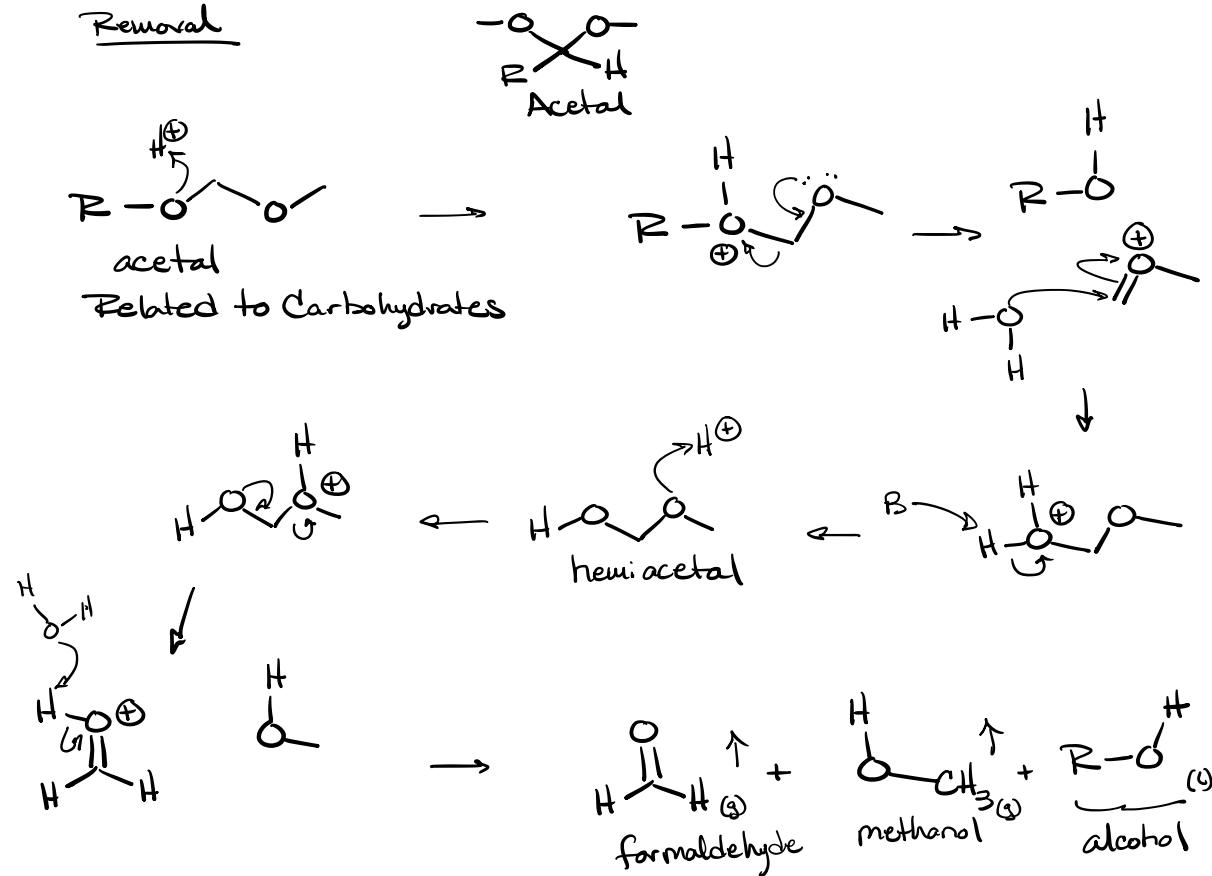
a) MOM      methoxy methyl ether       $R-O-\text{CH}_2\text{OCH}_3$



mechanism



Removal

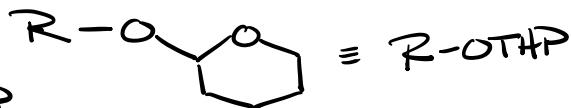


Acid labile      Removed by acid

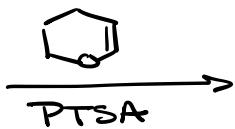
ether type

→ THP group

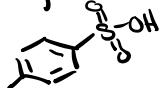
Tetrahydropyranyl group



on



Para-tolyl sulfonic acid

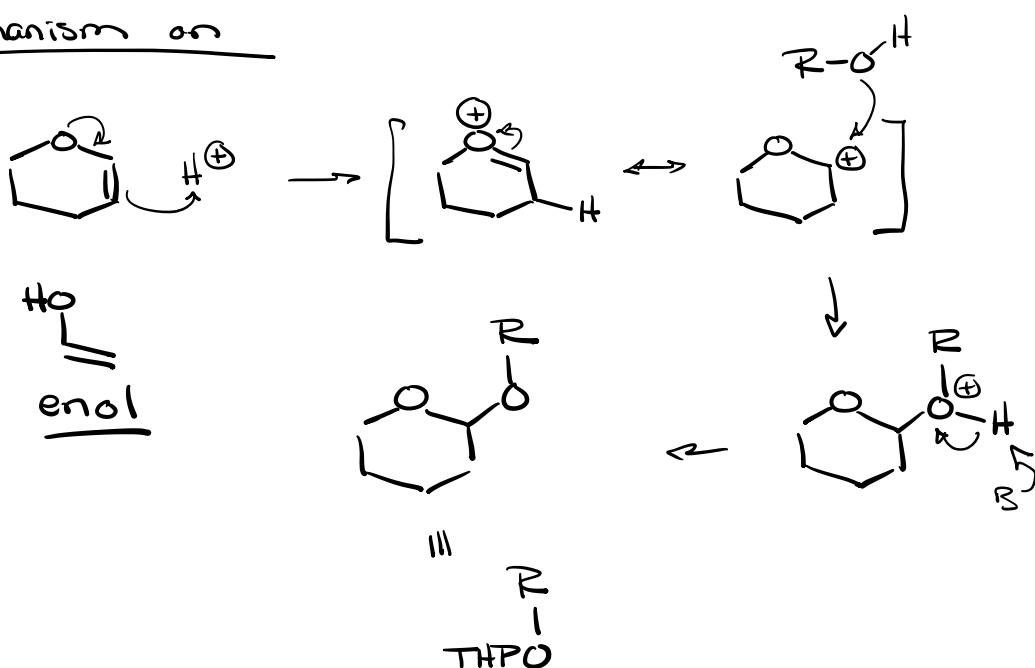


off



mechanism same as  
MOM group

Mechanism on

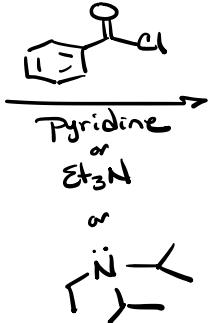


### Ester type

Benzoyl group

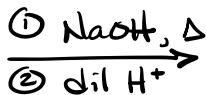


on



non nucleophilic  
 bases  
 "Steric Bases"

off

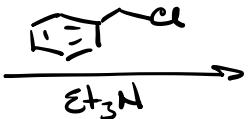


"Saponification"

Benzyl group



on



off



Hydrogenation

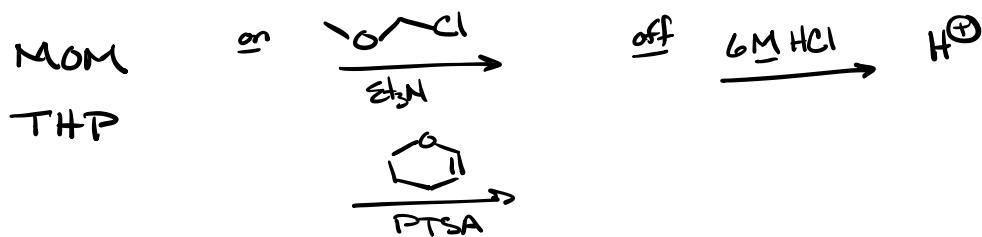
## Protecting Group list

Labile

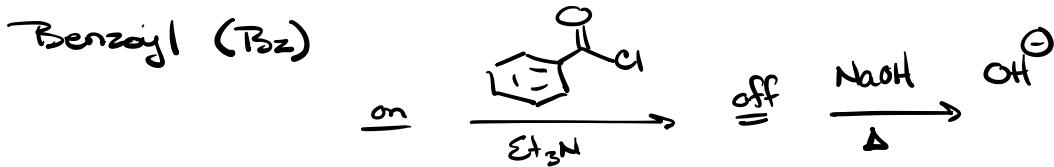
Silicon  
TMS  
Steric { TBDMS  
TIPS



## Acetal



## Ester



## Ether

Benzyl (Bn)

