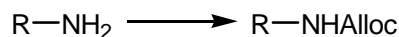


Cleavage: 3M, HCl, EtOAc
TFA, PhSH, DCM
AcCl, MeOH
CAN, CH₃CN

2. **Allyl carbamate (Alloc):**

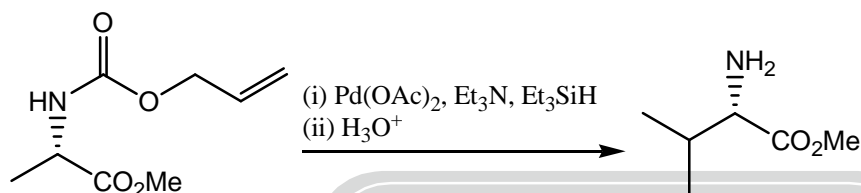


Formation:

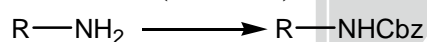


Cleavage :

Pd(Ph₃P)₄, TBTH, AcOH
Pd(Ph₃P)₄, Dimedone, THF



3. **Benzyl carbamate (Cbz or Z):**



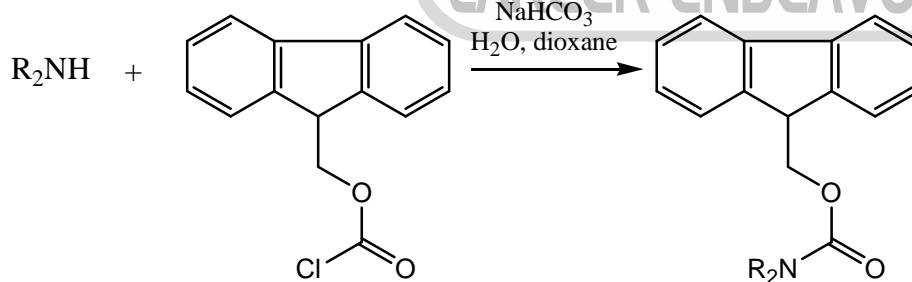
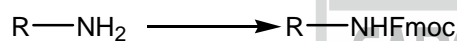
Formation :

BnOCOCl, Na₂CO₃, H₂O
(BnOCO)₂O, dioxane, H₂O

Cleavage:

H₂/Pd-C
H₂/Pd-C, NH₃
Pd-C, HCOONH₄
BBr₃, DCM
KOH, MeOH

4. **9-Fluorenylmethyl carbamate (Fmoc):**



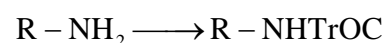
Formation:

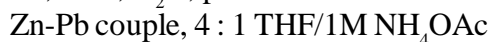
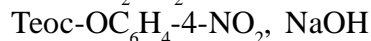
Fmoc-Cl, NaHCO₃, aq. Dioxane
Fmoc-OC₆F₅, NaHCO₃, acetone

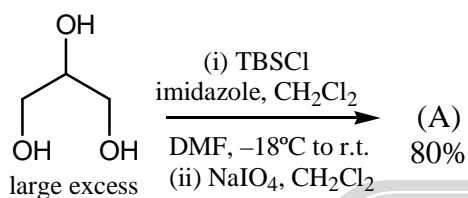
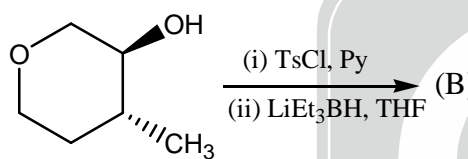
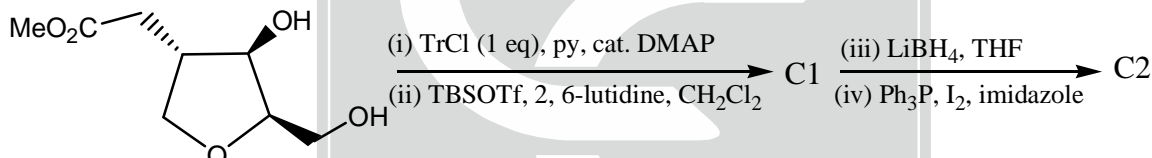
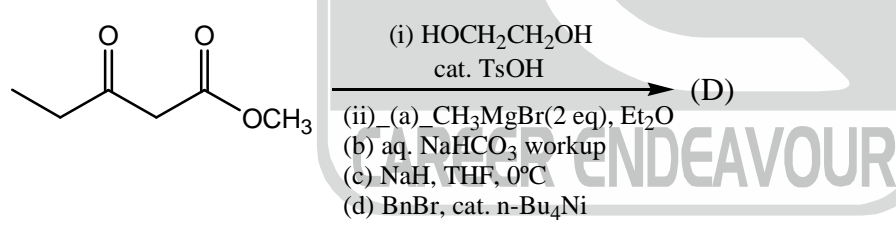
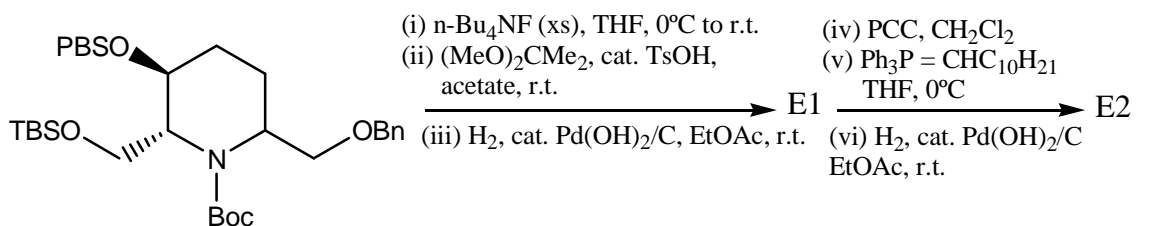
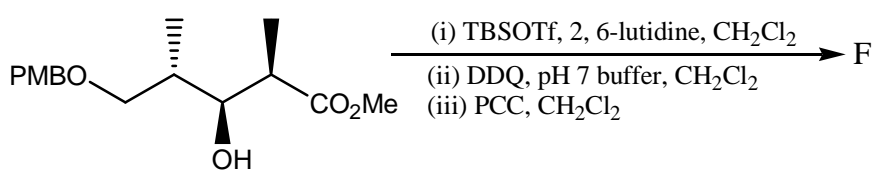
Cleavage :

Amine bases
Piperidine, morpholine, diisopropylethyl amine
TBAF, DMF

5. **2, 2, 2-Trichloroethyl carbamate (Troc):**



Formation:**Cleavage:****6. 2-Trimethylsilylethyl carbamate (Teoc):****5.8.****PRACTICE SET**

1.  (A) 80%
2.  (B)
3.  C1 $\xrightarrow{\text{(iii) LiBH}_4, \text{THF}}$ C2
 $\xrightarrow{\text{(iv) Ph}_3\text{P, I}_2, \text{imidazole}}$
4.  (D)
5.  E1 $\xrightarrow{\text{(iv) PCC, CH}_2\text{Cl}_2}$ E2
 $\xrightarrow{\text{(v) Ph}_3\text{P} = \text{CHC}_{10}\text{H}_{21}, \text{THF, } 0^\circ\text{C}}$
 $\xrightarrow{\text{(vi) H}_2, \text{cat. Pd(OH)}_2/\text{C, EtOAc, r.t.}}$
6.  F