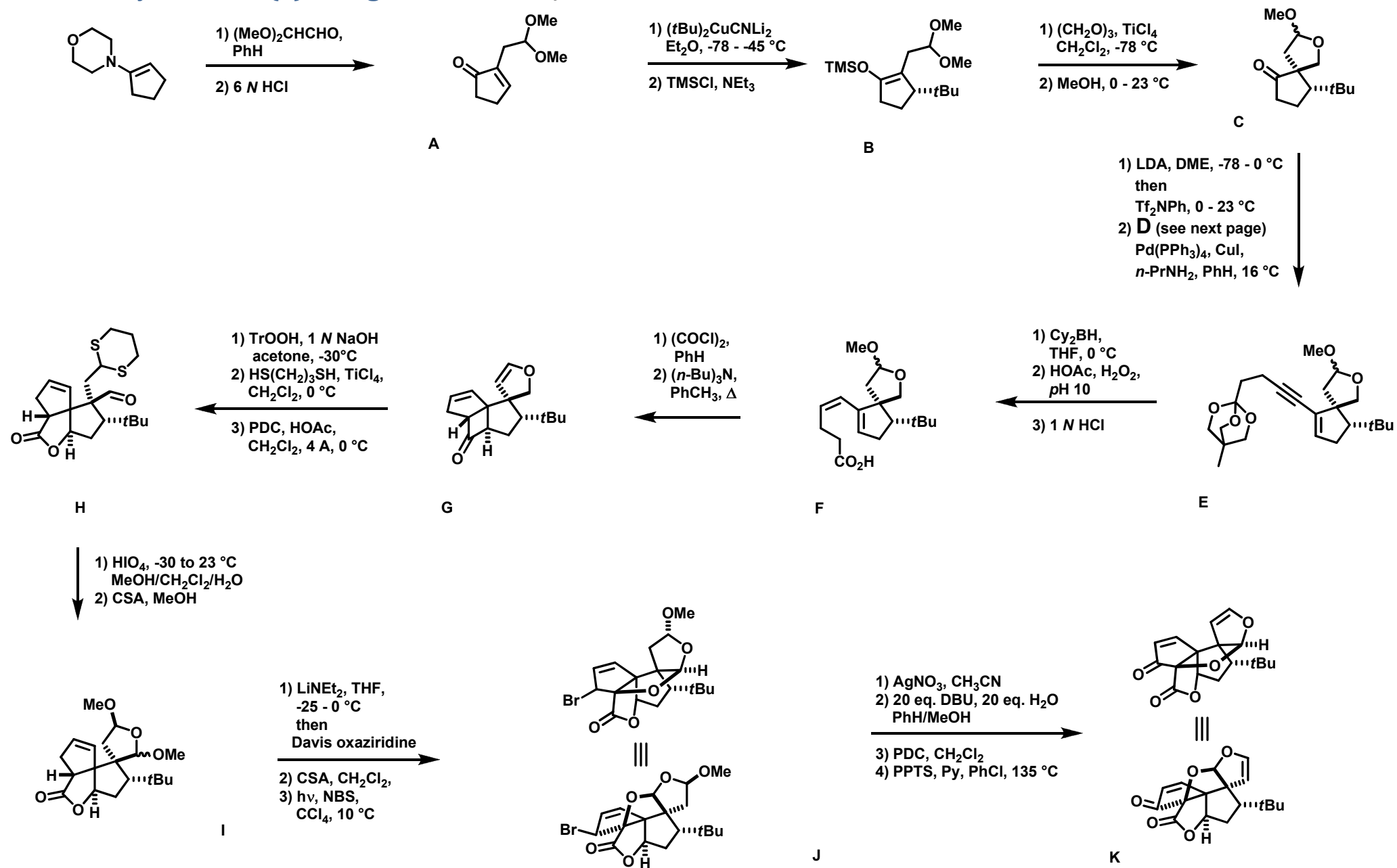
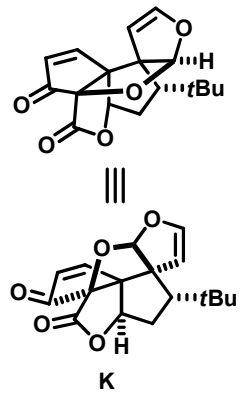


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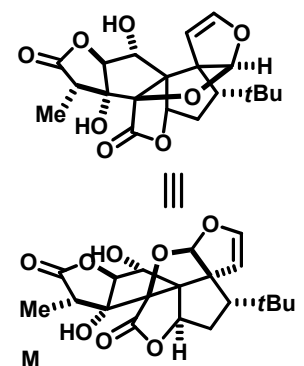




1)  $\text{TrOOH}$ ,  $\text{BnMe}_3\text{N}^+\text{O}i\text{Pr}$   
 THF,  $-10\text{ }^\circ\text{C}$

1)  $\text{CH}_3\text{CH}_2\text{C}(\text{O})\text{Ot-Bu}$ ,  
 LDA, then L  
 THF/HMPA

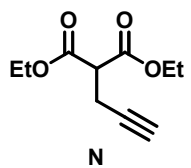
2) CSA,  $\text{CH}_2\text{Cl}_2$



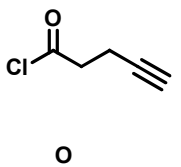
1) TBSOTf, 2,6-lutidine,  
 $\text{CH}_3\text{CN}$   
 2)  $\text{OsO}_4$ , Py  
 3)  $\text{I}_2$ ,  $\text{CaCO}_3$ , MeOH  
 4)  $\text{BF}_3 \cdot \text{OEt}_2$ ,  $\text{CH}_2\text{Cl}_2$


diethylmalonate

i)  $\text{NaOEt}$ , EtOH  
 ii) propynylchloride,  
 EtOH



1)  $\text{KOH}$ , EtOH/ $\text{H}_2\text{O}$   
 2)  $\Delta$   
 3)  $(\text{COCl})_2$



1)   
 2)  $\text{BF}_3 \cdot \text{OEt}_2$

