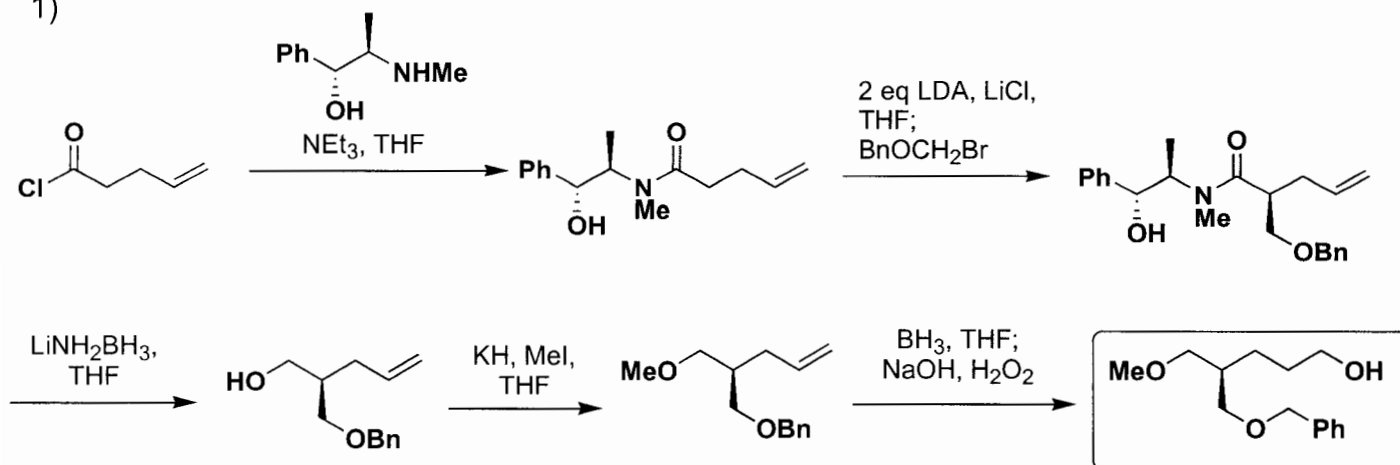


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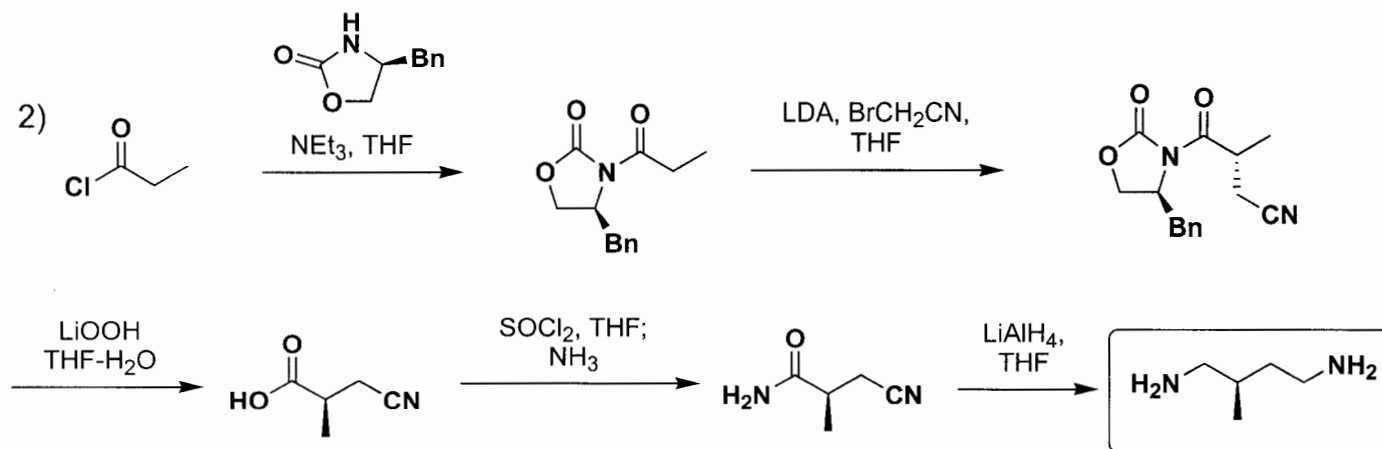
March 30, 2005
Wesley Austin

Problem Set 3 Solutions
Stereocontrolled Alkylation and Related Strategies

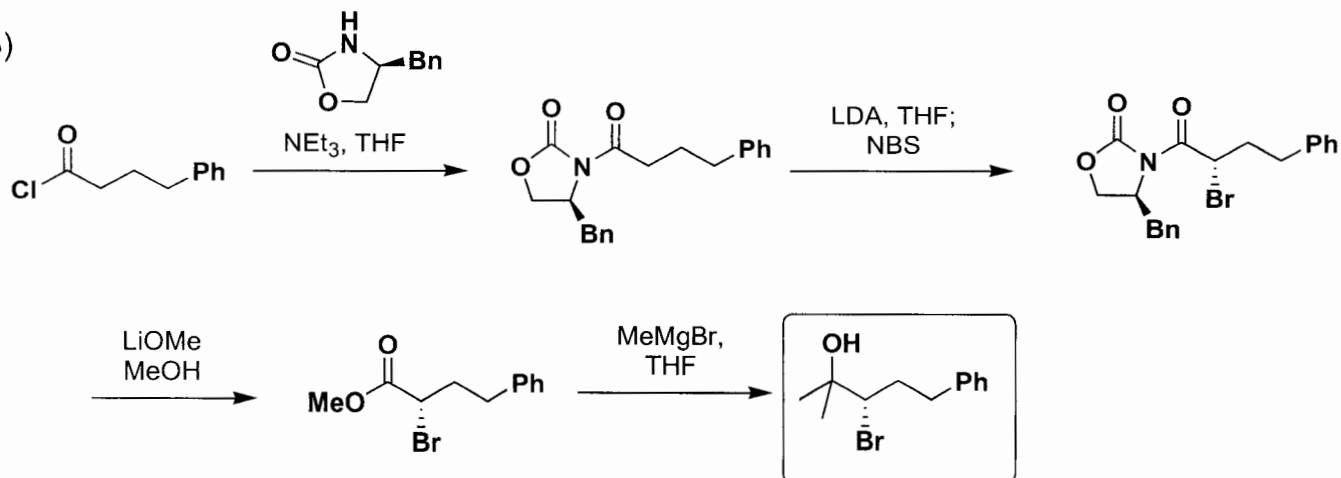
1)

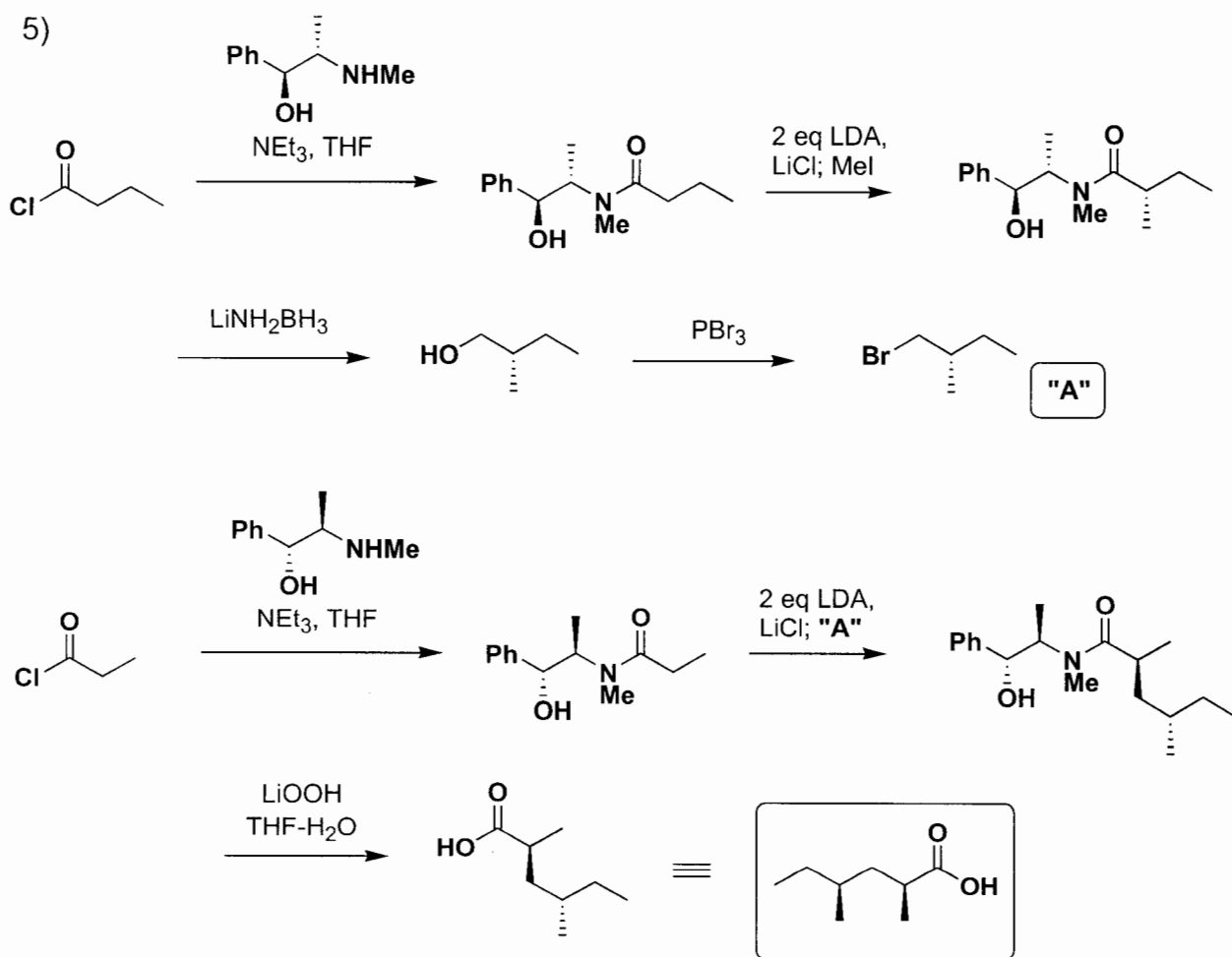
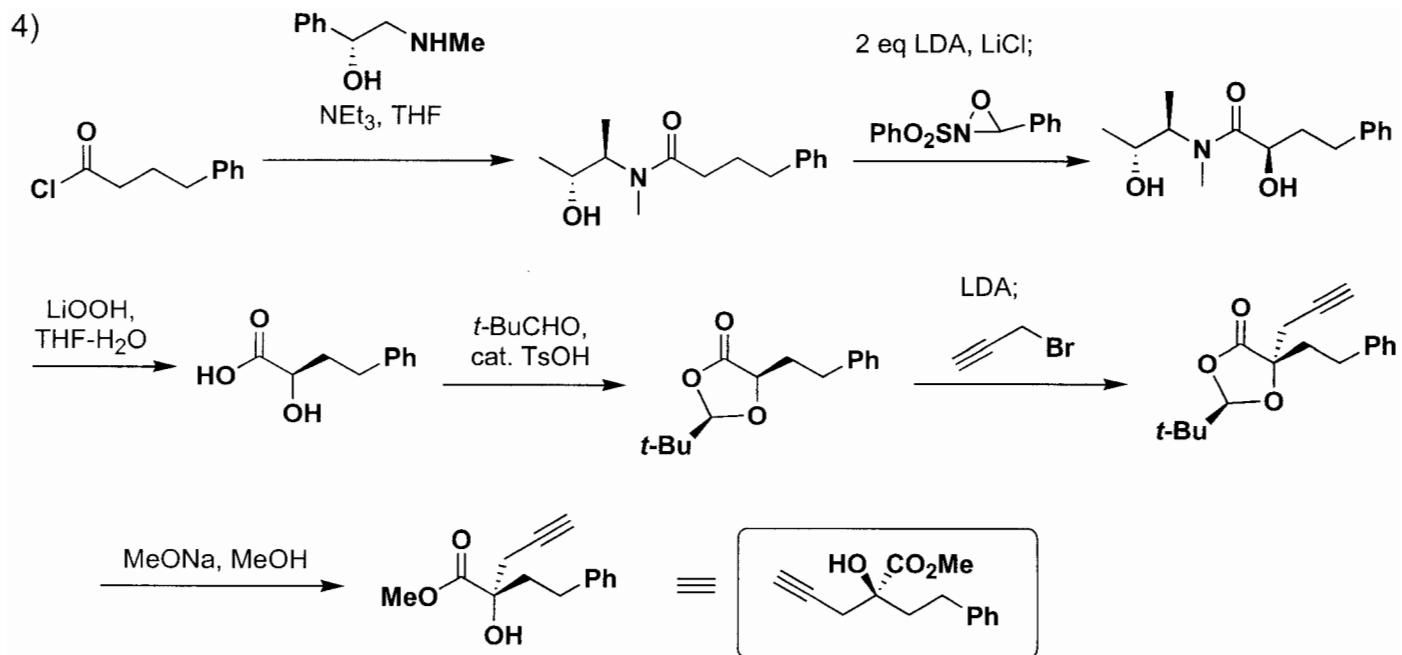


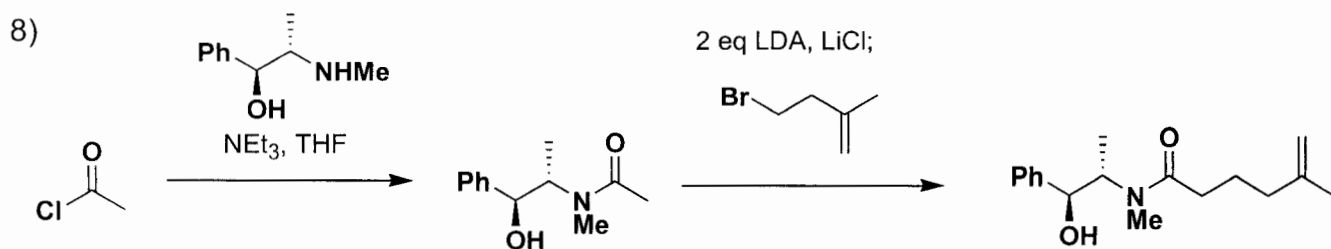
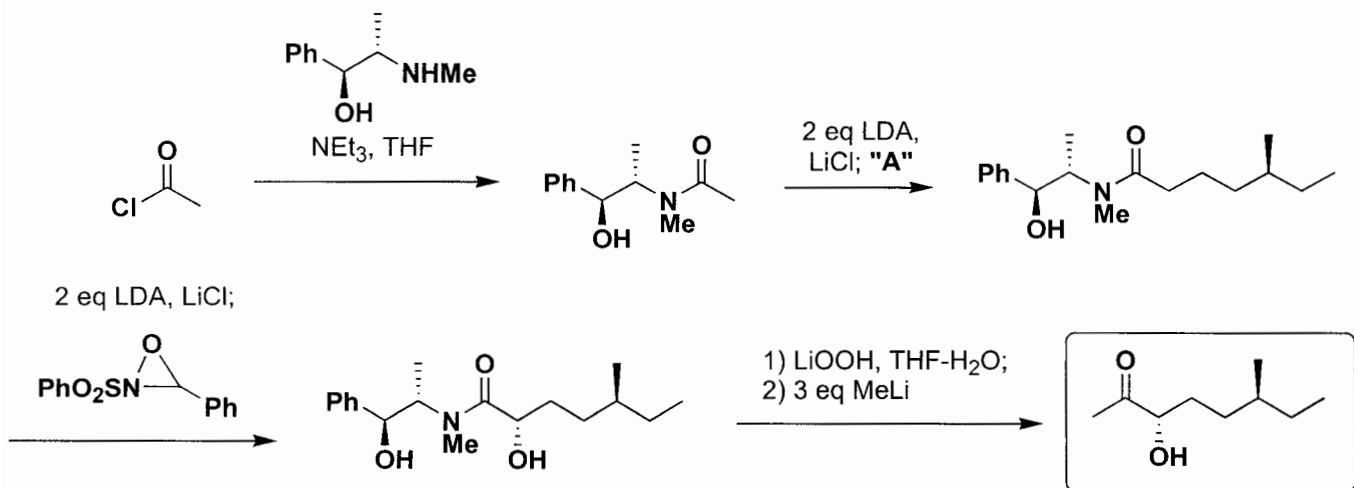
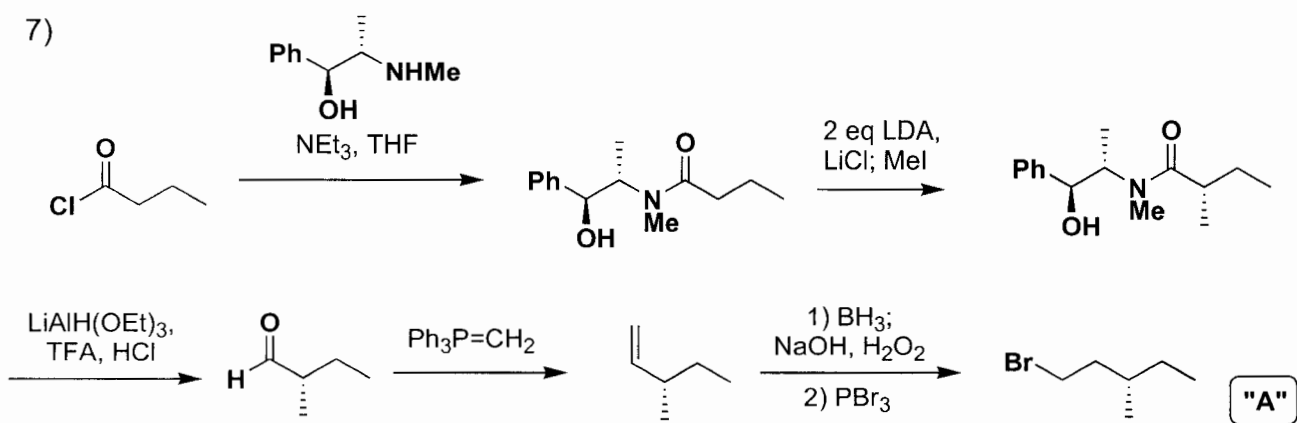
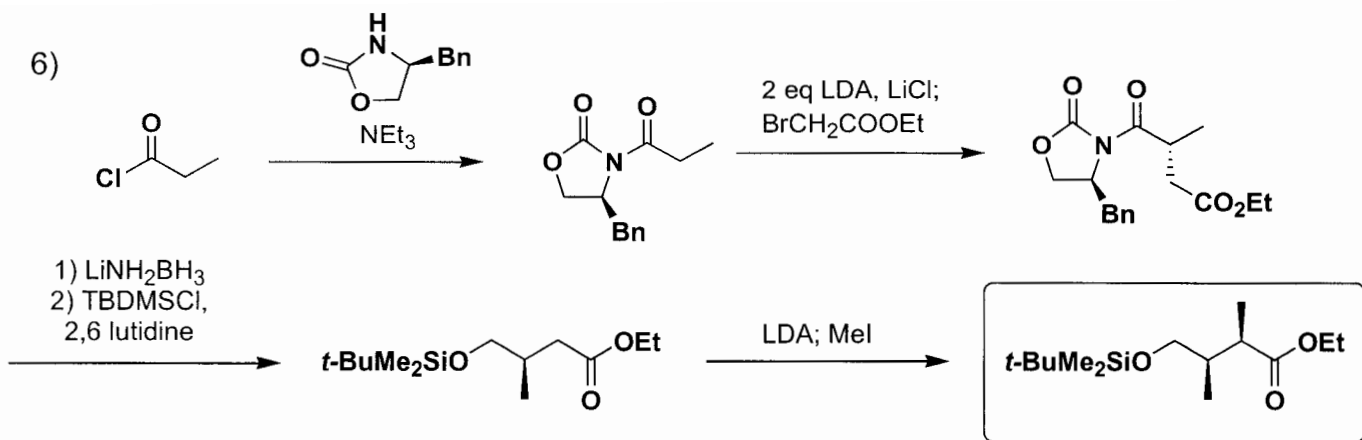
2)



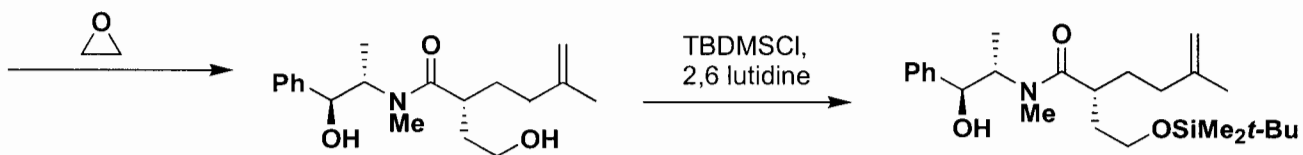
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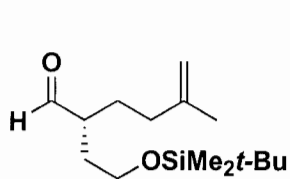




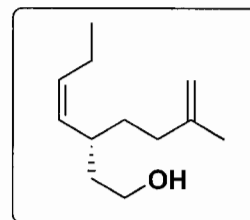
2 eq LDA, LiCl;



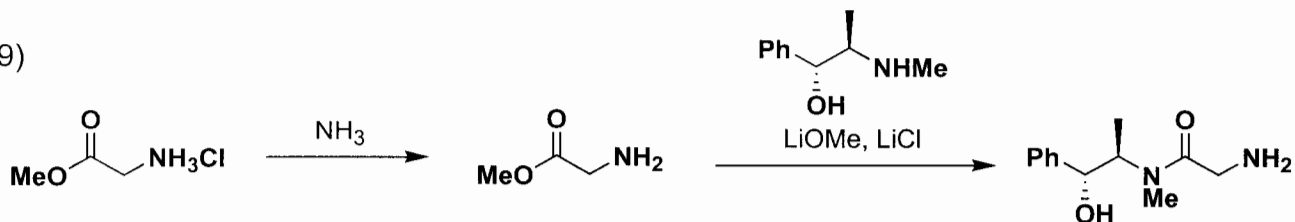
LiAl(OEt)₃;
TFA, HCl



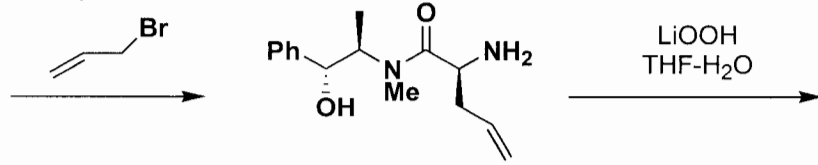
1) $\text{Ph}_3\text{P}^{\oplus}\text{CH}_2\text{CH}_2\text{CH}_3\text{Br}^{\ominus}$
NaHMDS, toluene
2) TBAF



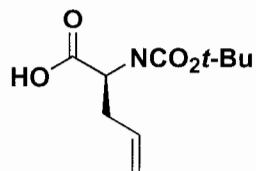
9)



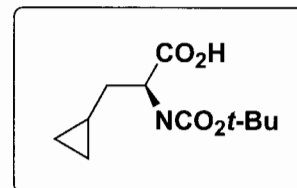
2 eq LDA, LiCl;



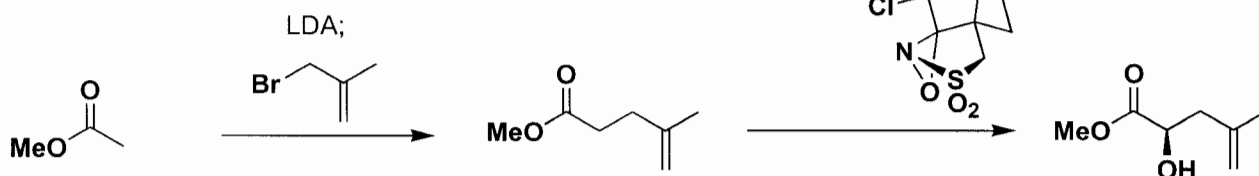
$\text{ClCO}_2t\text{-Bu}$,
 NEt_3



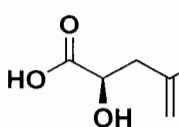
CH_2I_2 , Zn-Cu



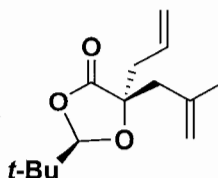
10)



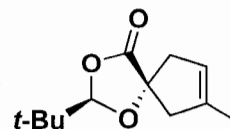
LiOH
 H_2O

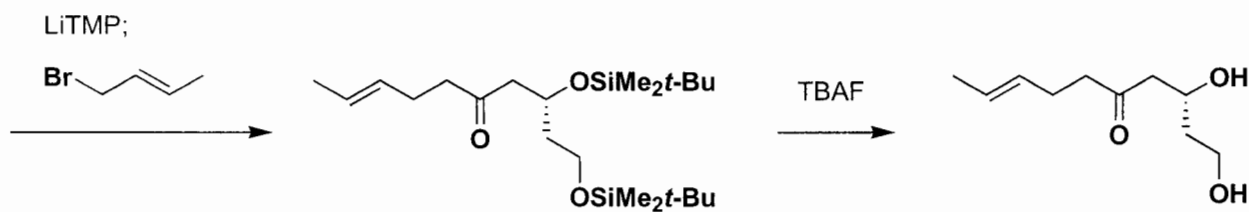
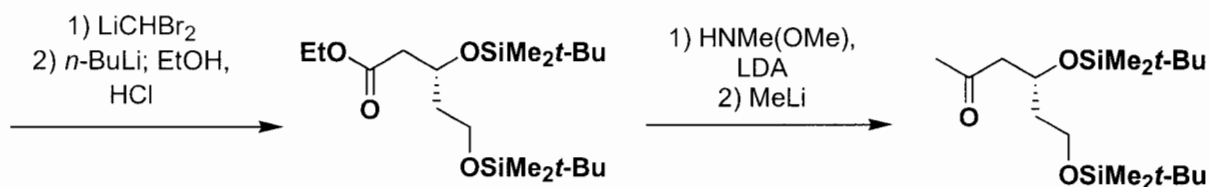
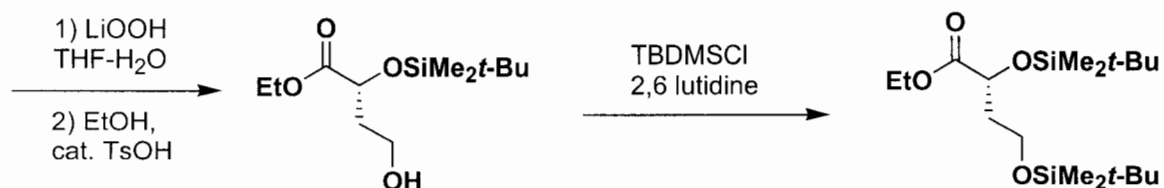
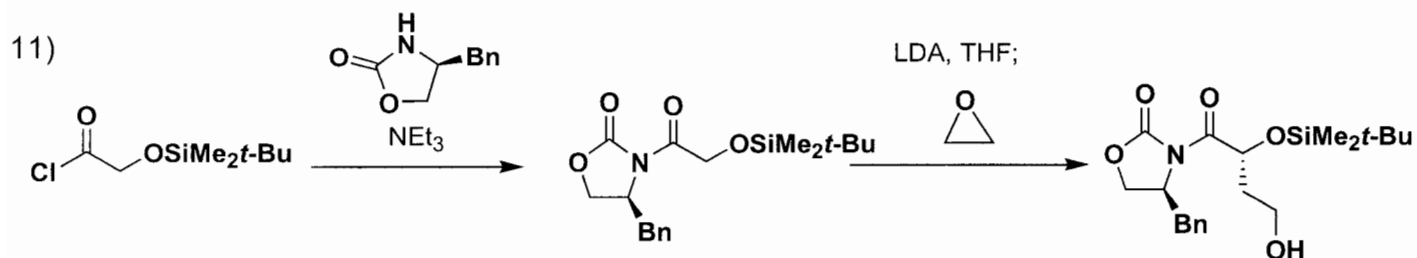
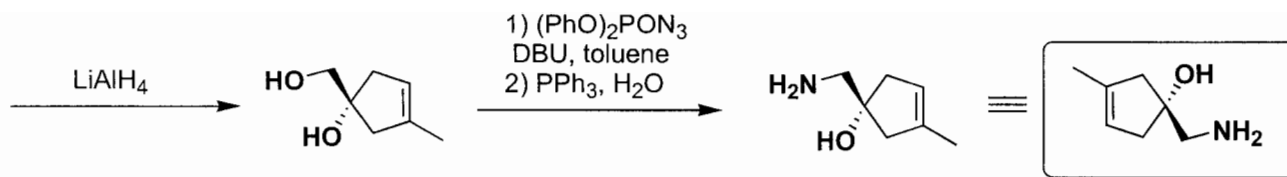


1) $t\text{-BuCHO}$,
cat TsOH
2) LDA;
allyl bromide

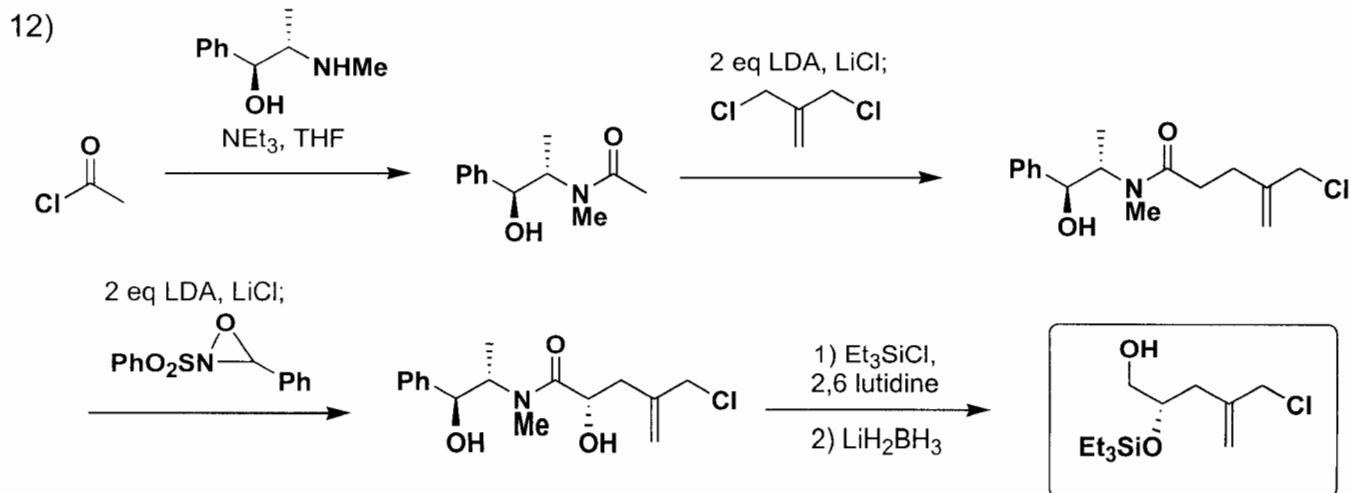


Grubb's 2nd
generation catalyst





For an alternate route using SAMP-hydrazone, see Enders *European J. Org. Chem.* **1999**, 751.



See also Crimmins *Org. Lett.* **2001**, 3, 949.