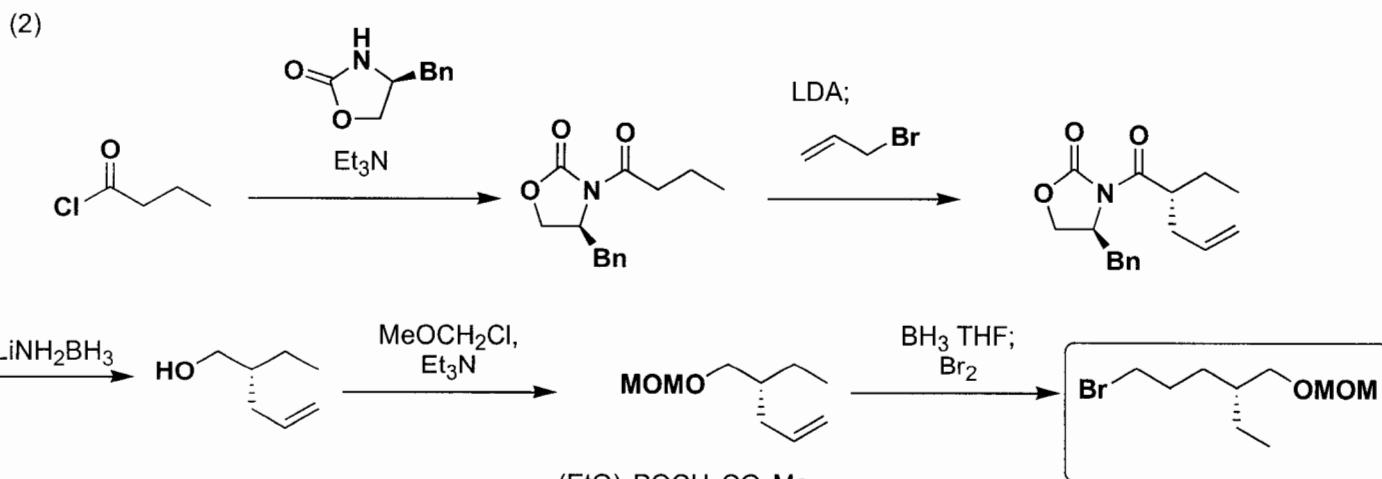
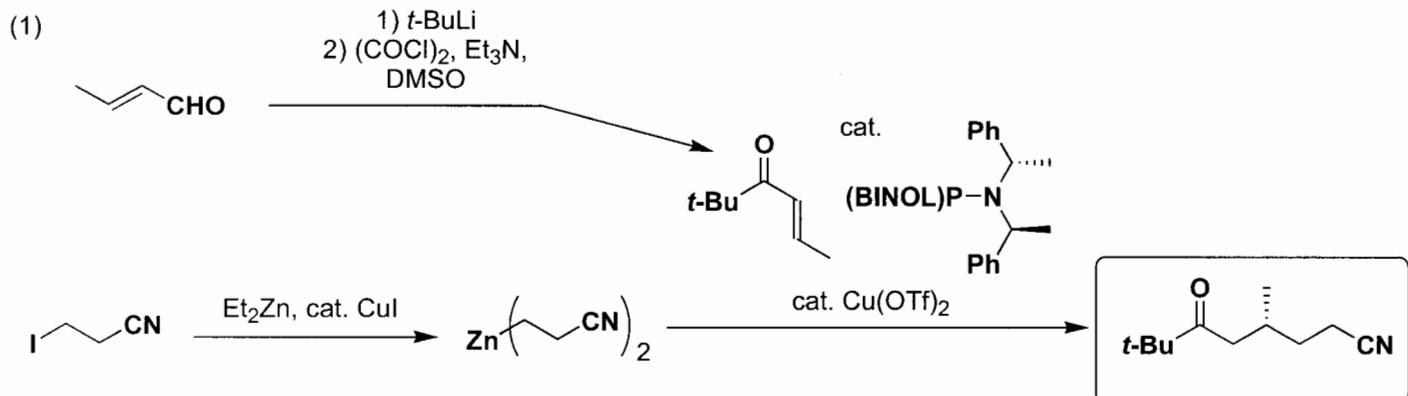


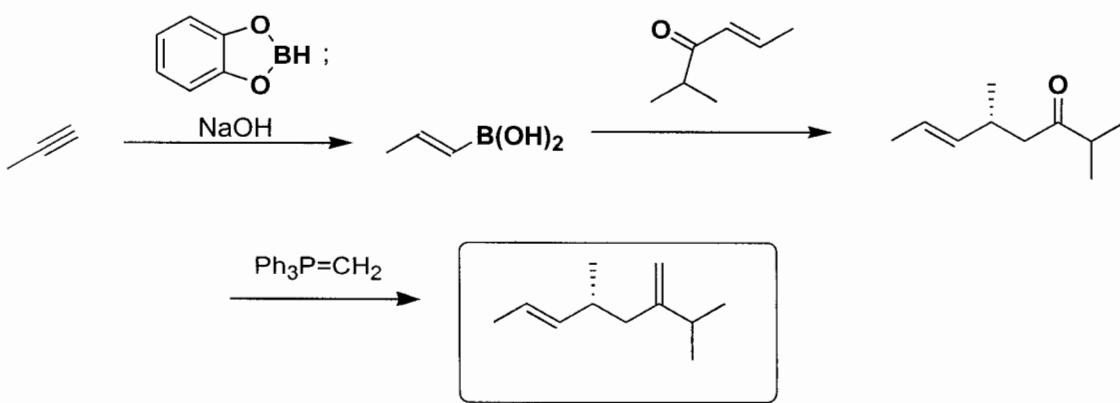
Massachusetts Institute of Technology
Organic Chemistry 5.512

April 6, 2005
 Wesley Austin

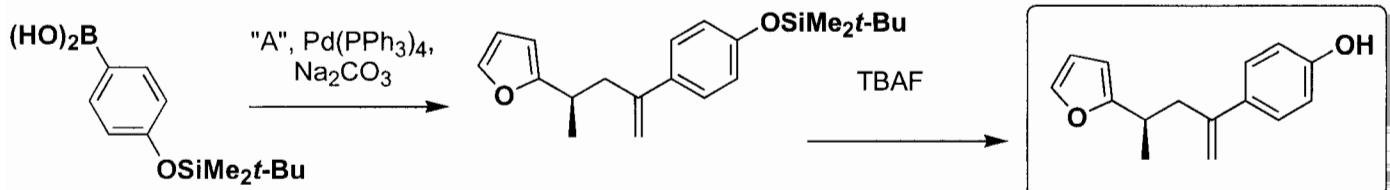
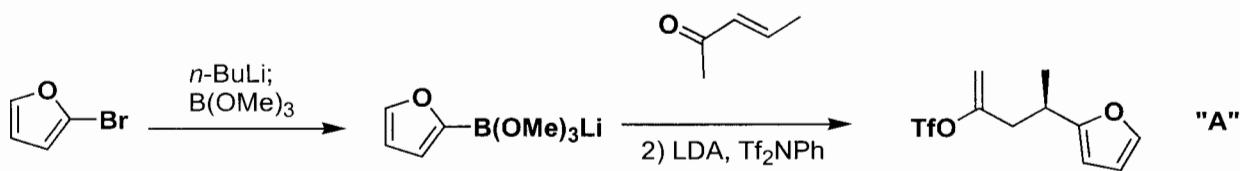
Problem Set 4 Solutions
 Practice Problems for First Exam



(3)

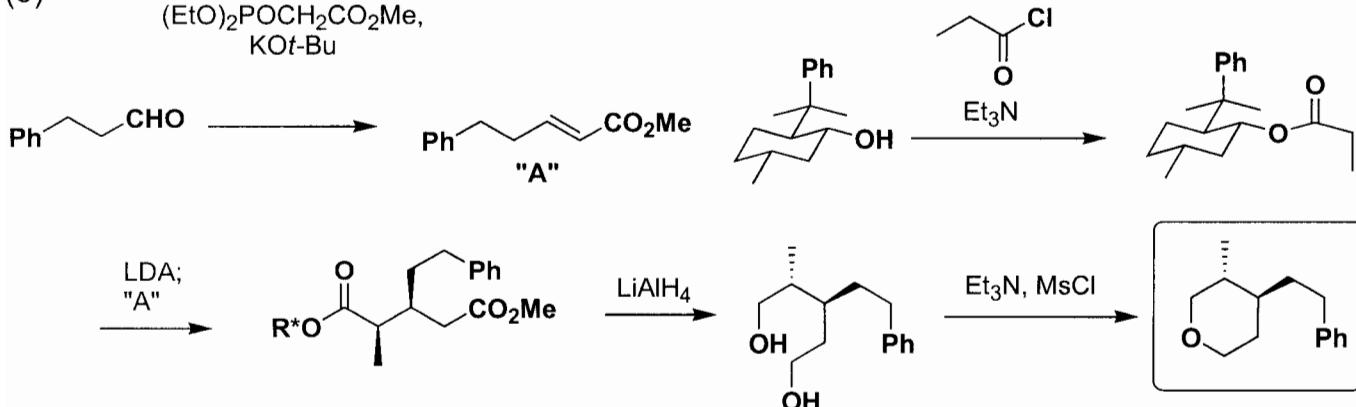


(4) $\text{1) Rh}(\text{acac})(\text{C}_2\text{H}_4)_2,$
 (S)-BINAP

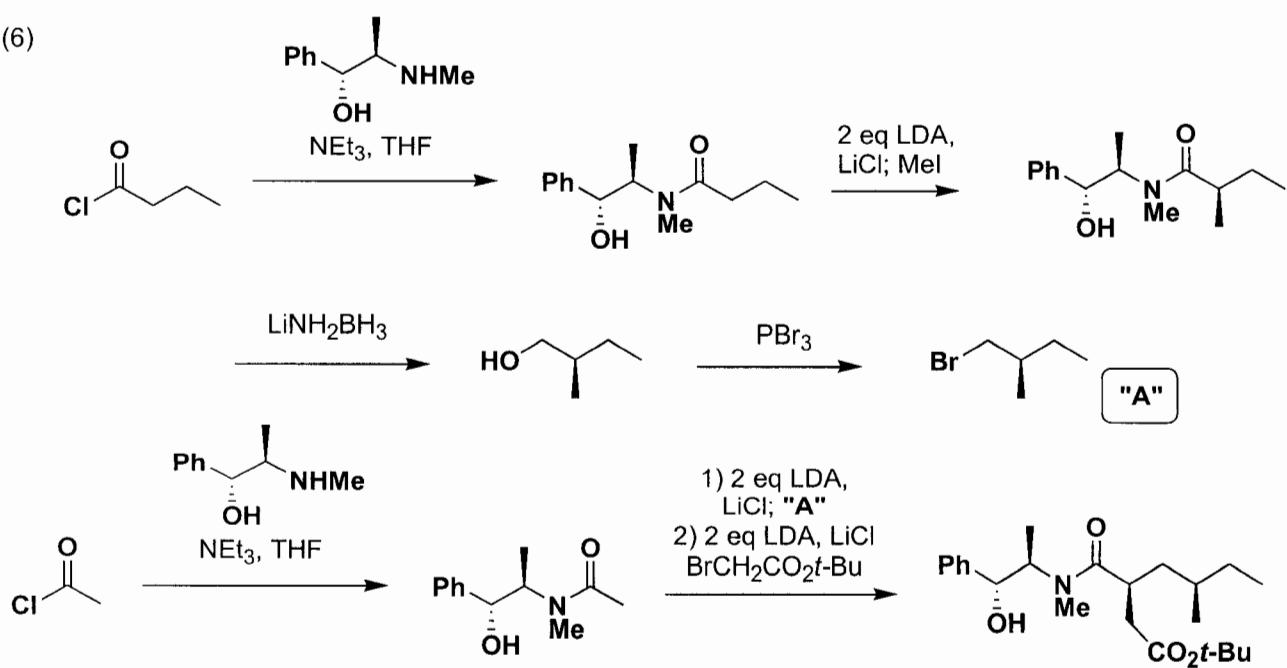


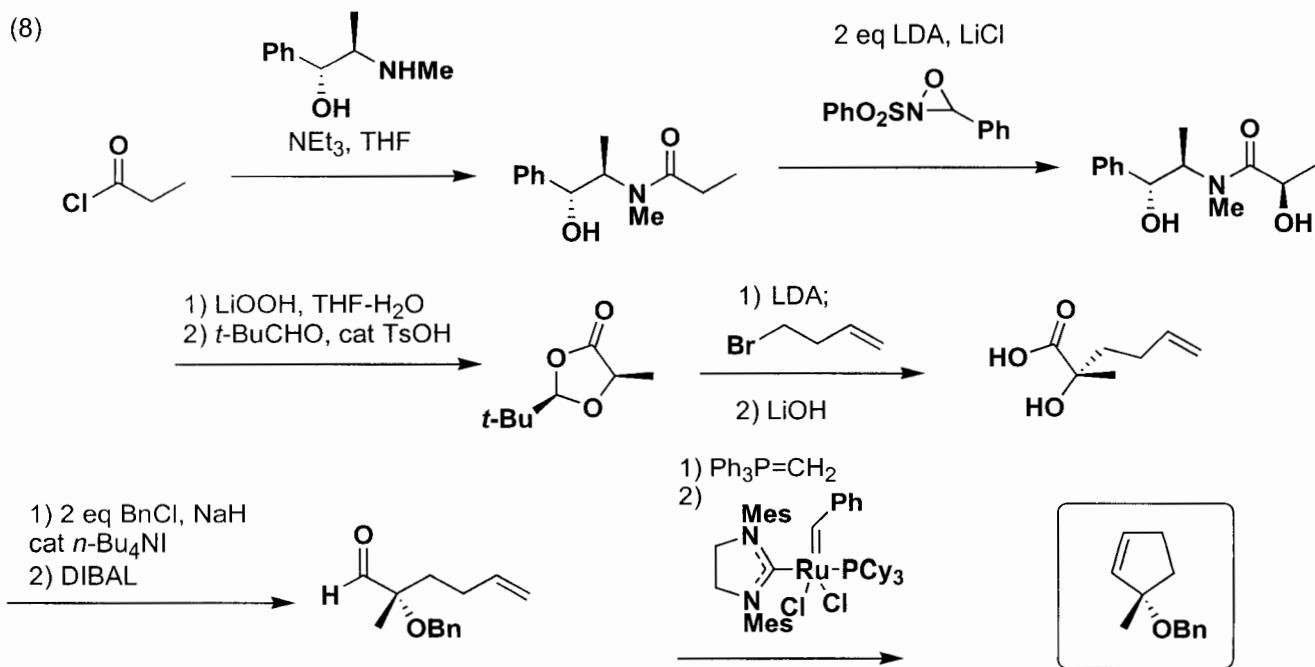
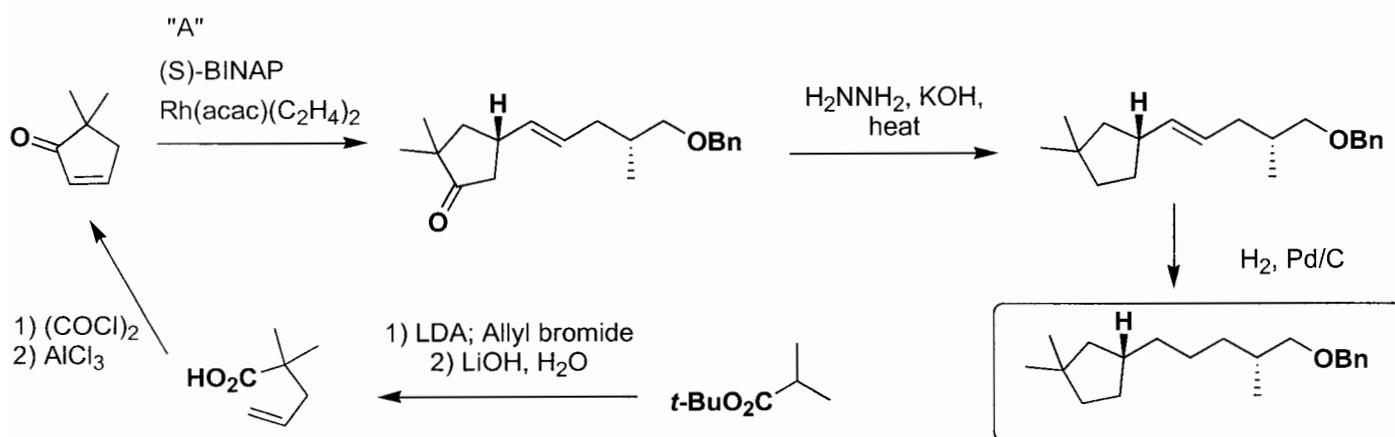
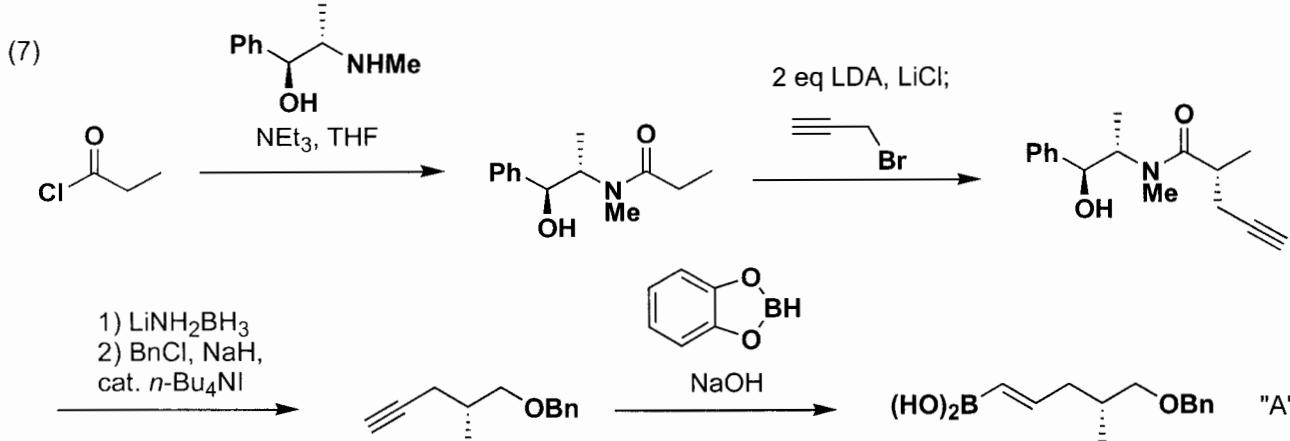
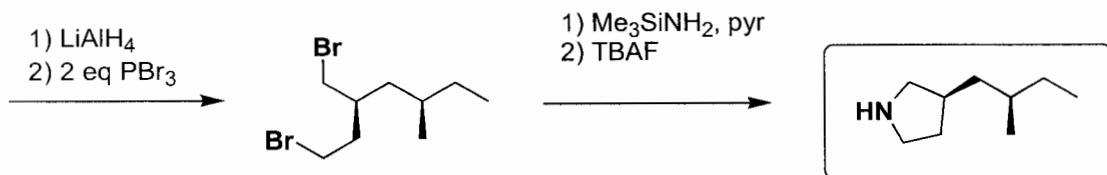
(5)

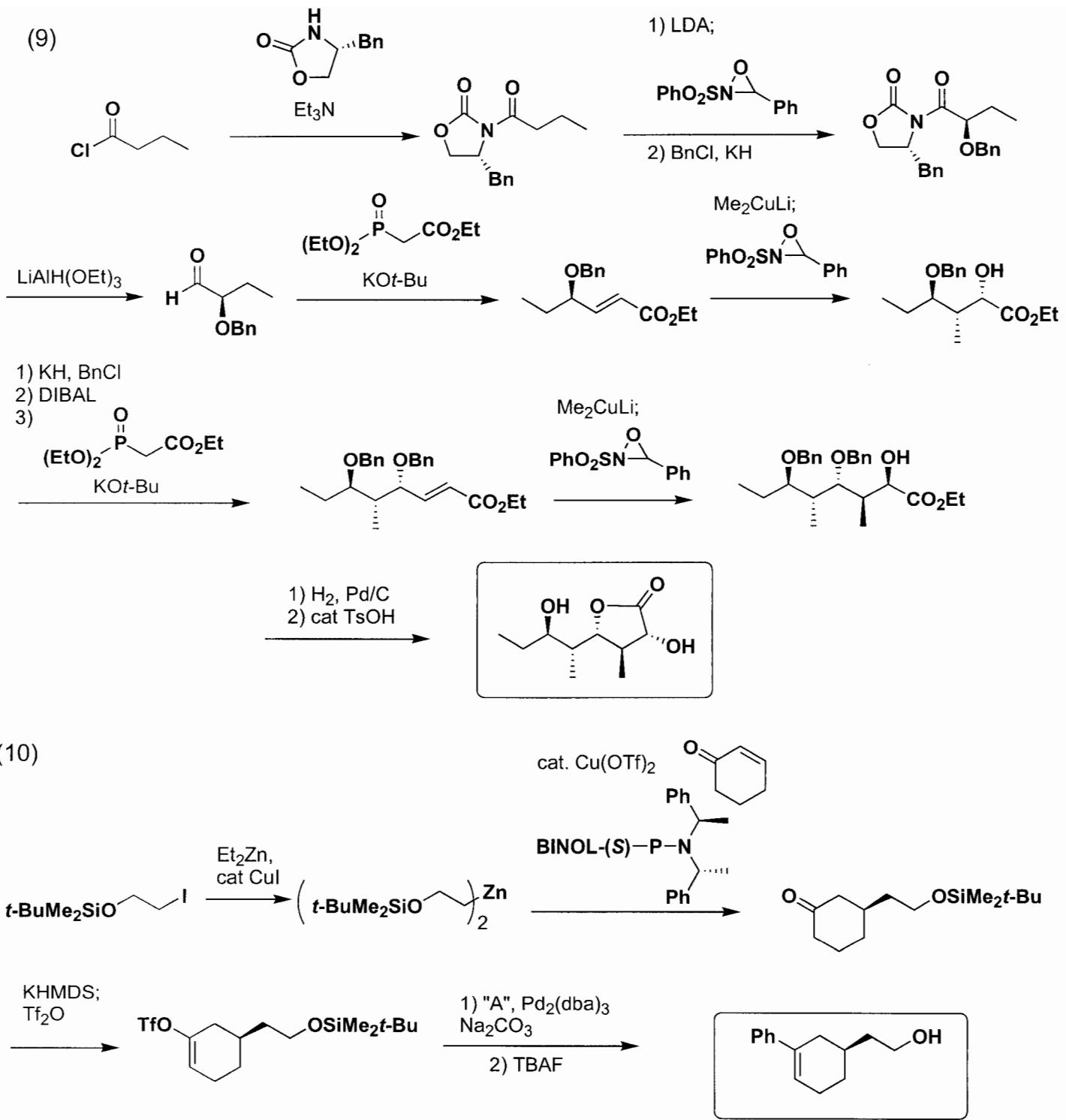
$(\text{EtO})_2\text{POCH}_2\text{CO}_2\text{Me},$
 KOt-Bu

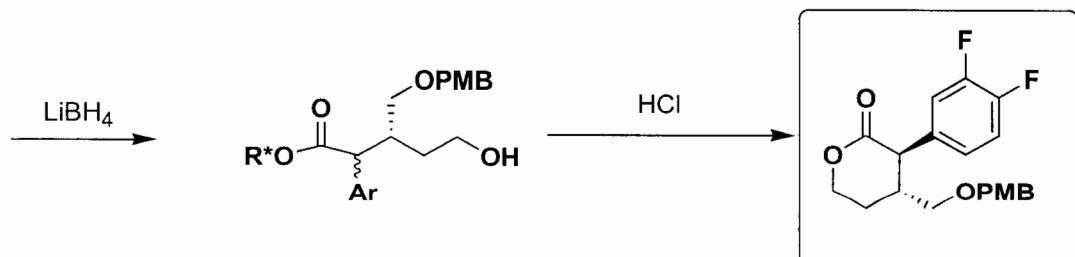
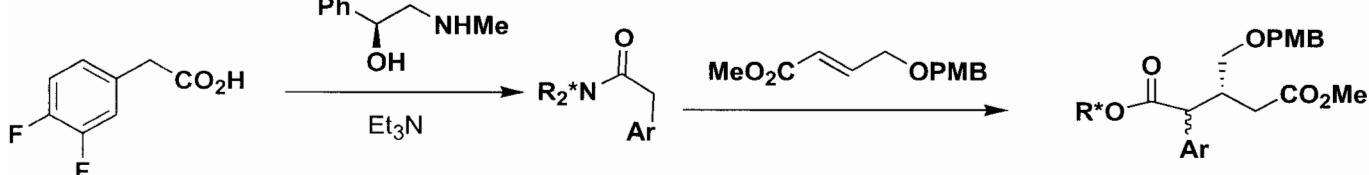
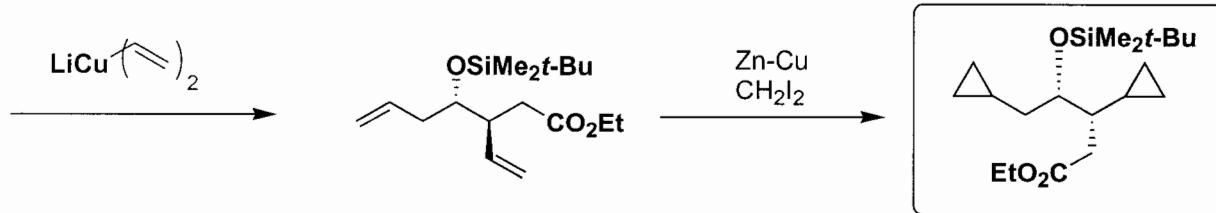
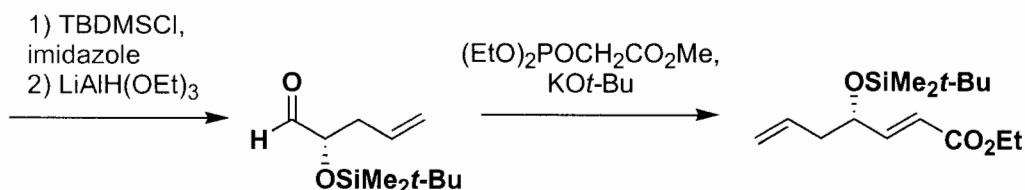
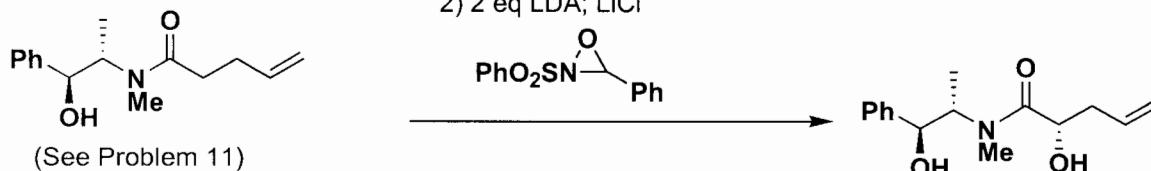
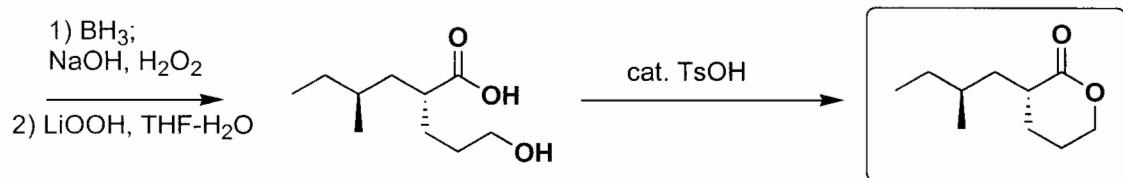
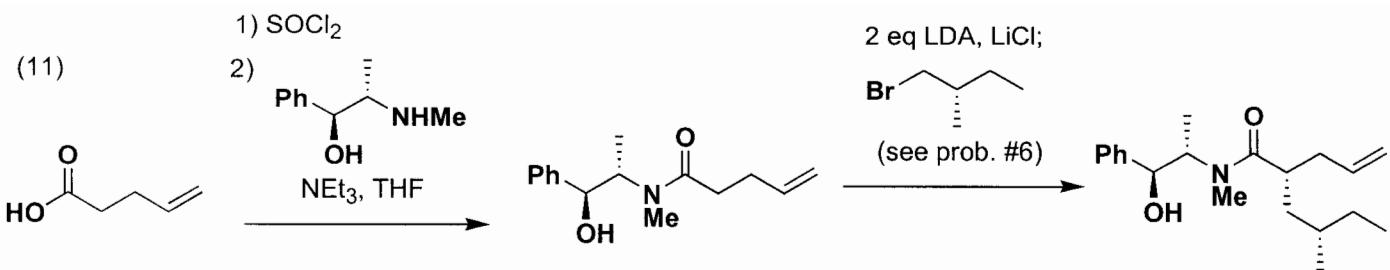


(6)

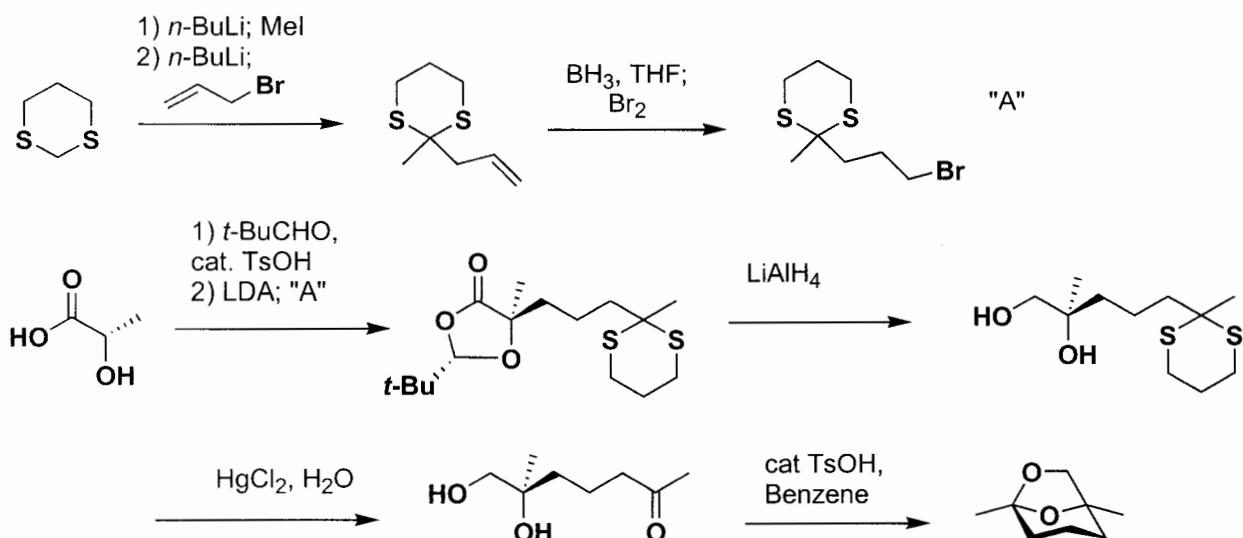




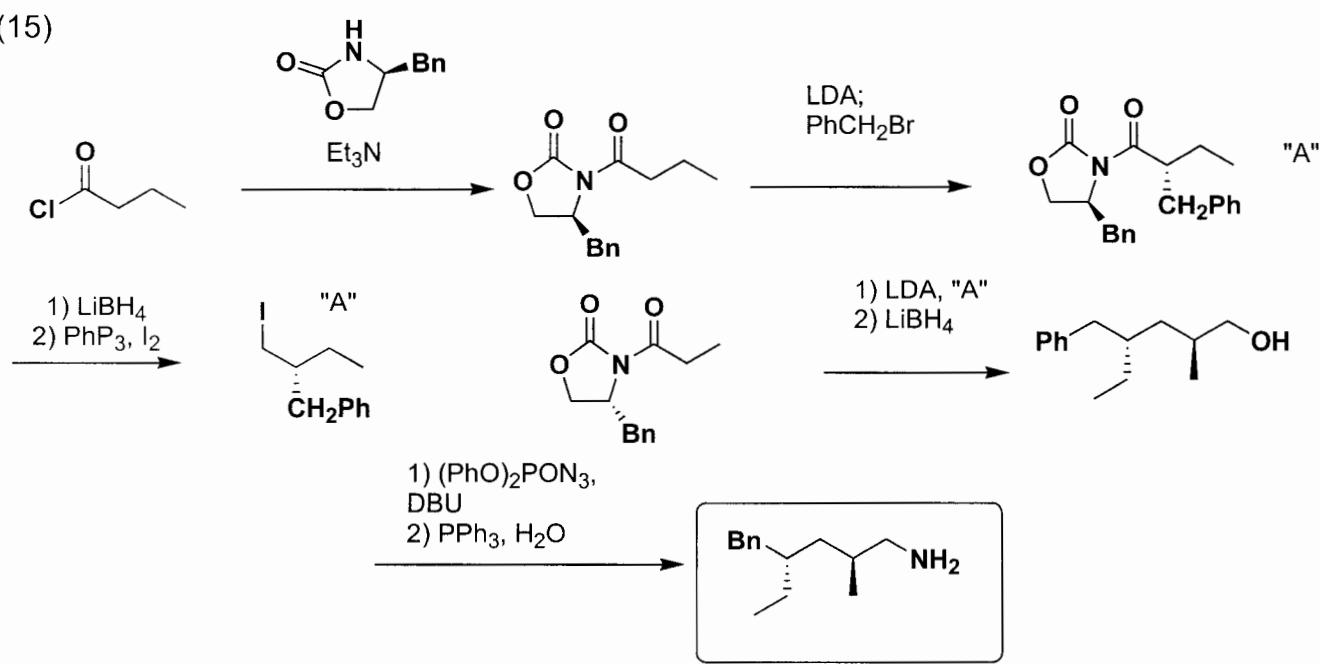




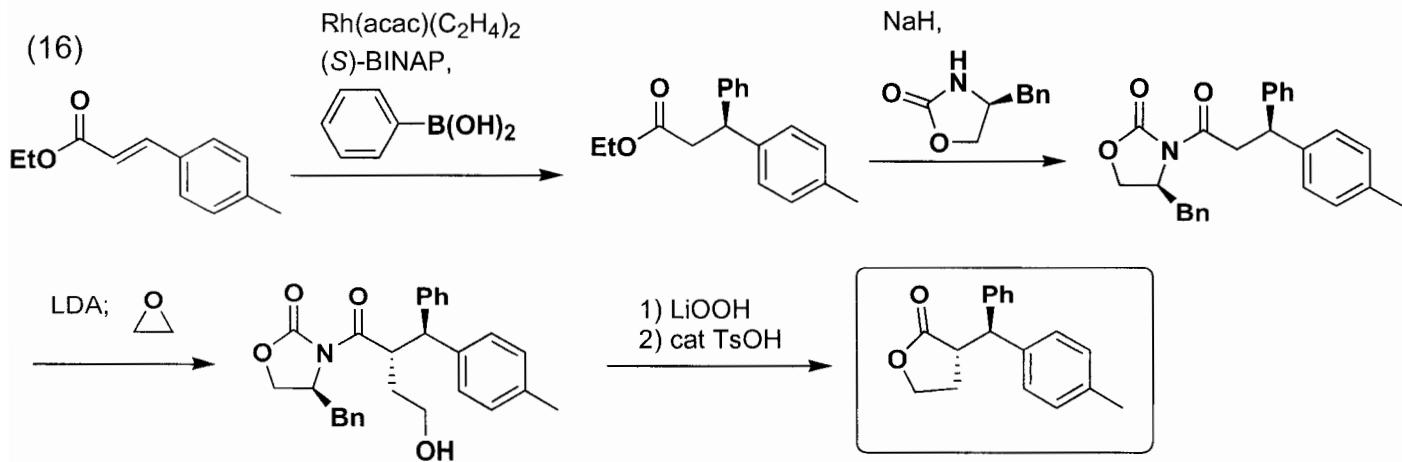
14) (-)-Frontalin. See also Seebach, *Liebigs Ann. Chem.* **1983**, 1930.

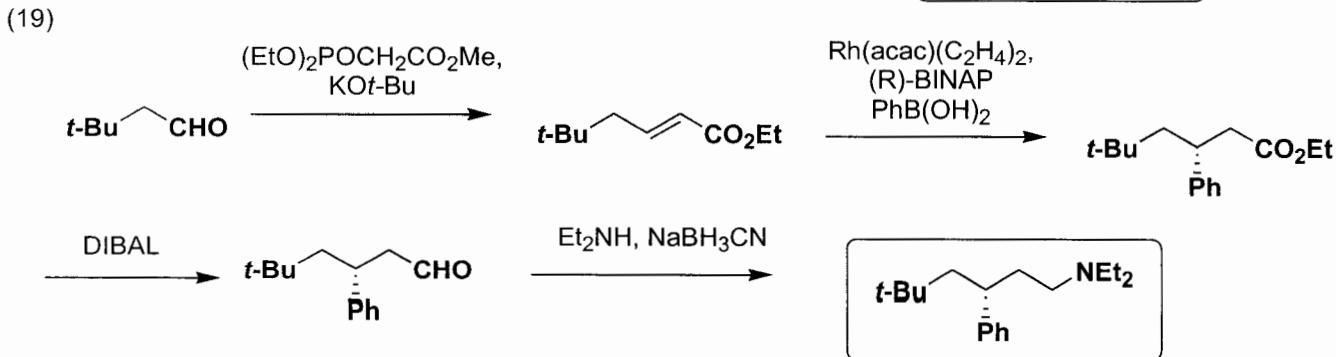
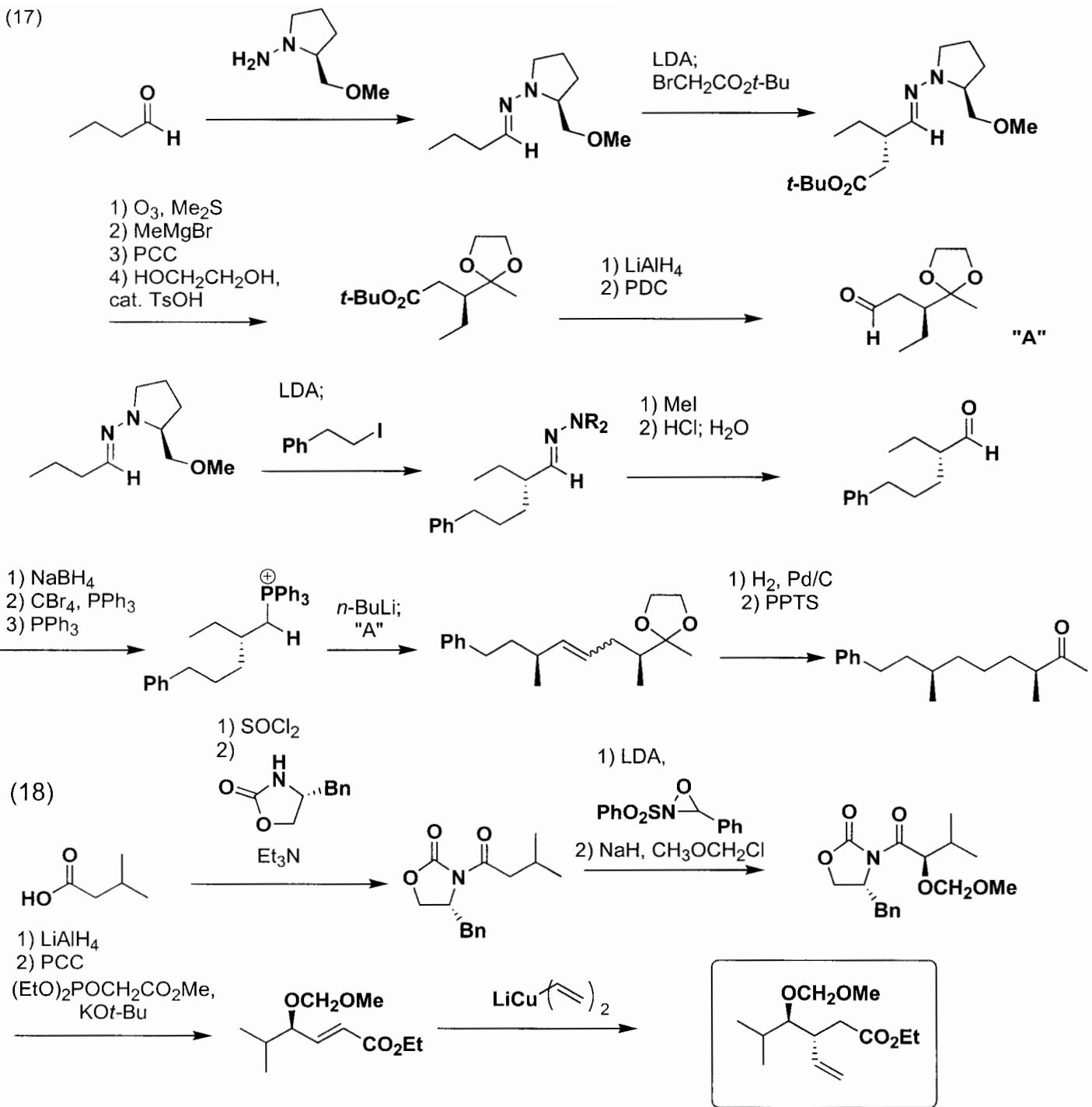


(15)

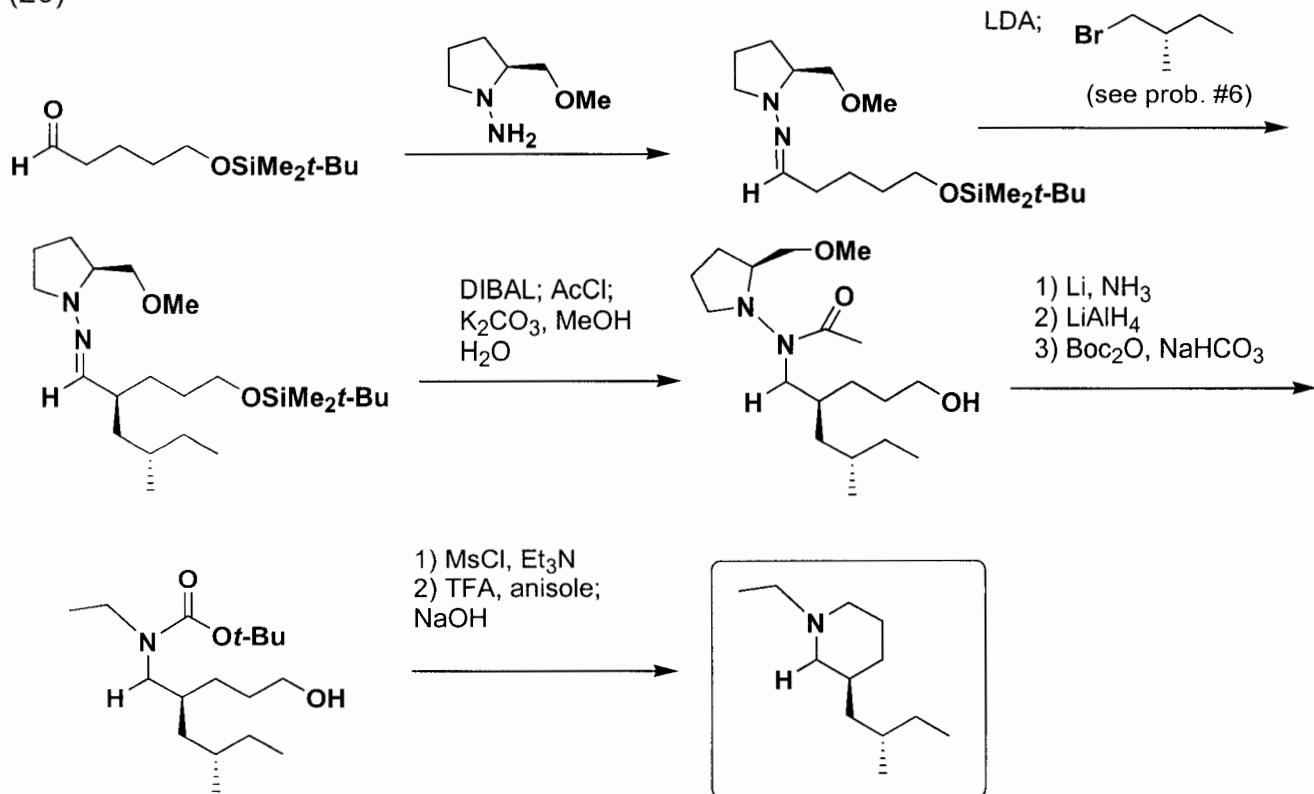


(16)





(20) (*S,S*)-Stenusine. See Enders, *J. Org. Chem.* **1993**, *58*, 4881.



(21)

