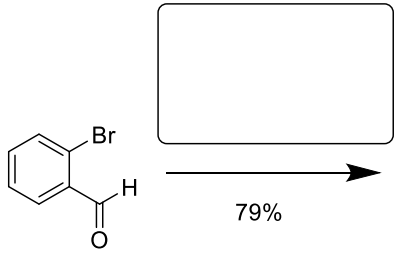
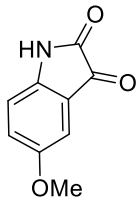
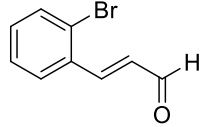


# WORKSHEET 50

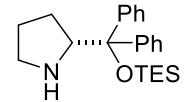
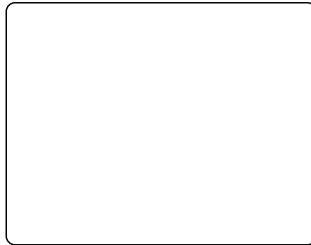


79%



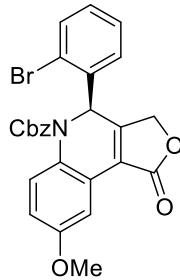
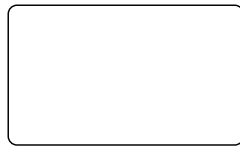
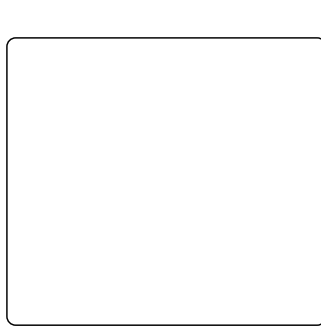
NaH, PhCH<sub>2</sub>OCOCI  
 THF, then  
 i-PrOH, H<sub>2</sub>SO<sub>4</sub>

78%



PhCOOH, 4Å sieves, CH<sub>2</sub>Cl<sub>2</sub>

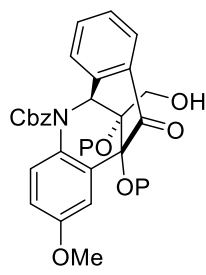
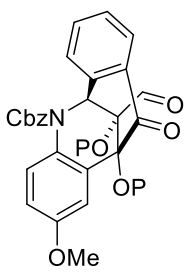
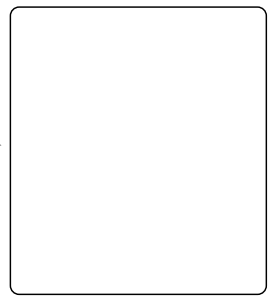
89%, >98% ee



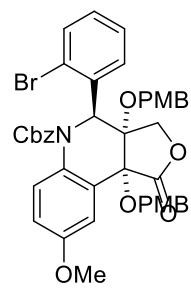
RuCl<sub>3</sub>·3H<sub>2</sub>O  
 NaIO<sub>4</sub>, CeCl<sub>3</sub>·7H<sub>2</sub>O

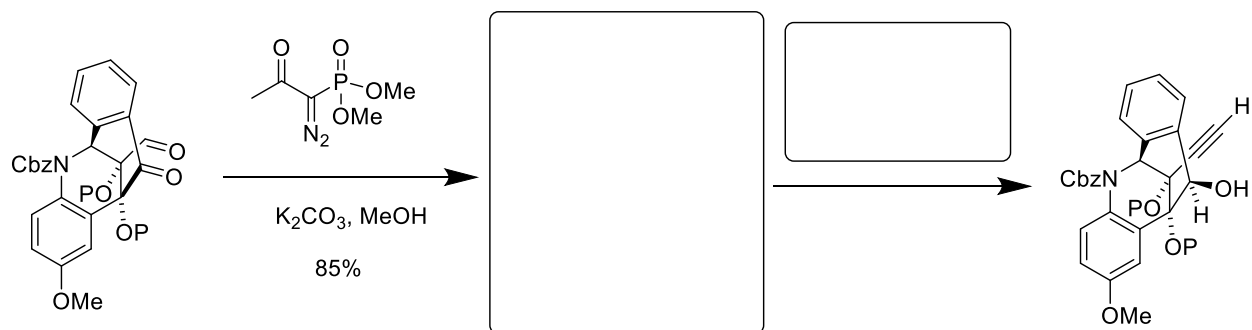
EtOAc, H<sub>2</sub>O, MeCN

88%



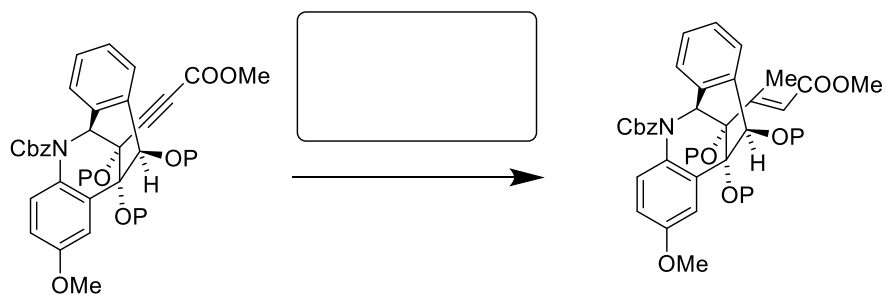
[P=PMB]



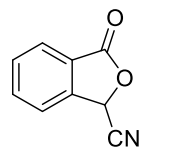


a.

b.



1.  $\text{H}_2, \text{Pd/C}, \text{MeOH}$   
 2.  $(\text{NH}_4)_2\text{Ce}(\text{NO}_3)_6, \text{MeCN}, \text{H}_2\text{O}$   
 75%



$\text{LiHMDS}, \text{THF},$   
 $-78^\circ\text{C to rt}$   
 86%

