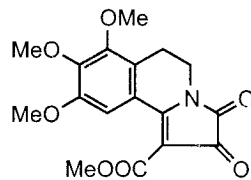
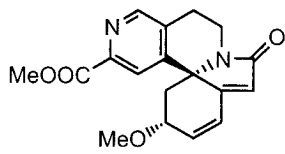


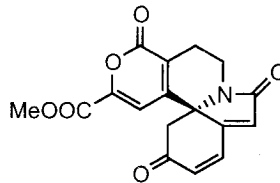
- 1)  $\text{CH}_3\text{NO}_2$ ,  $\text{AcONH}_4$ ,  $\text{AcOH}$ ,  $140^\circ\text{C}$
- 2)  $\text{LiAlH}_4$ , THF, rt (2 steps for 72%)
- 3)  $\begin{cases} \text{COCl} \\ \text{COOMe} \end{cases}$   
10%  $\text{K}_2\text{CO}_3\text{aq}$ ,  $\text{CH}_2\text{Cl}_2$ ,  $0^\circ\text{C}$ , quant.
- 4) polyphosphate ester (PPE),  $80^\circ\text{C}$ , 82%
- 5)  $(\text{COCl})_2$ ,  $\text{Et}_2\text{O}$ -*n*-heptane,  $0^\circ\text{C}$ , quant.



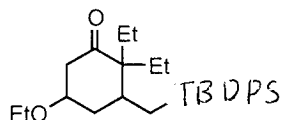
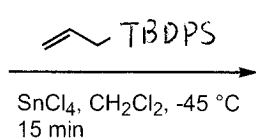
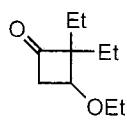
- 6)  $\begin{matrix} \text{OTMS} \\ \text{O} \\ \text{C} \\ \text{C} \\ \text{OMe} \end{matrix}$   
 $\text{Et}_2\text{O}$ -*n*-heptane,  $130^\circ\text{C}$ ,  
then  $\text{LiBH}_4$ -THF and then  $\text{H}^+$
- 7)  $\text{MsCl}$ , pyridine, quant.
- 8)  $\text{O}_3$ ,  $\text{BF}_3$   $\text{Et}_2\text{O}$ ,  $\text{CH}_2\text{Cl}_2$ ,  $-78^\circ\text{C}$ , 47%.
- 9) 90%  $\text{AcOH}$ ,  $150^\circ\text{C}$ ,  
then  $\text{CH}_2\text{N}_2$ , 62%.
- 10)  $\text{MgCl}_2$ ,  $\text{KI}$ ,  $\text{DMSO}$ ,  $110^\circ\text{C}$ ,  
then  $\text{CH}_3\text{I}$ ,  $50^\circ\text{C}$ , ~61%



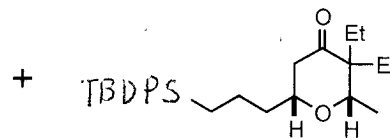
8-Oxoerymelanthine



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55%, *cis:trans*=7:3



39%

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