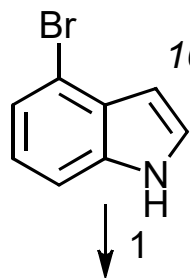


# Synthesis Challenge #78

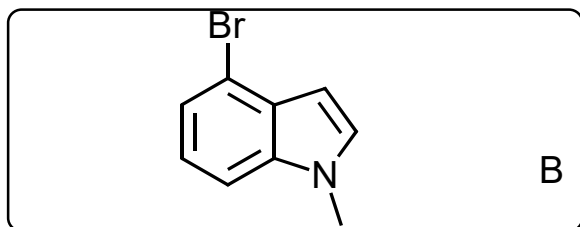
AG Wegner

10-Step Total Synthesis of Speradine C, H. Liu, L. Chen, K. Yuan, Y. Ji,  
*Angew. Chem. Int. Ed.* **2019**, ASAP, doi: 10.1002/anie.201902004.  
28.03.2019



A

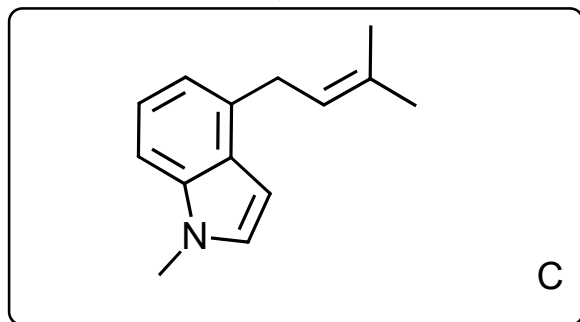
1) NaH, MeI, THF, rt



B

2

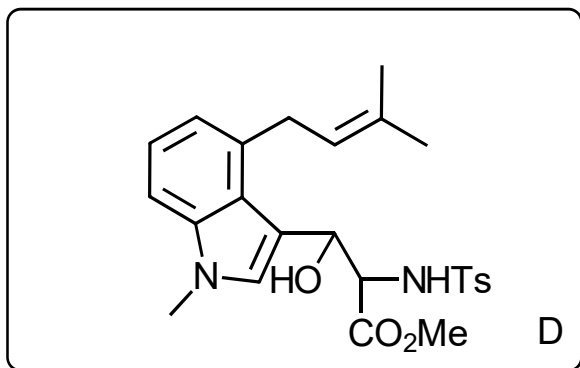
2) Mg, THF, reflux, then I, rt



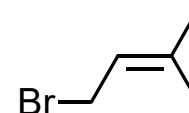
C

3,4

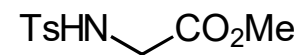
3) POCl<sub>3</sub>, DMF, RT,  
then KOH (aq.), 90°C  
4) LHMDS, II, THF, -78°C



D

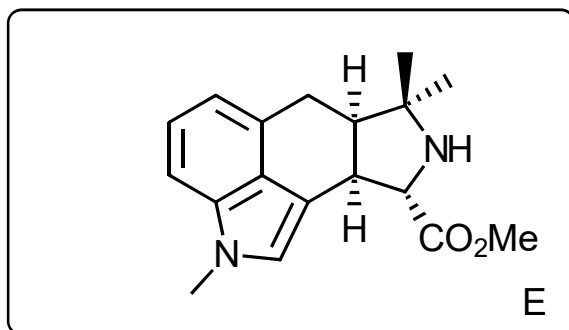


I

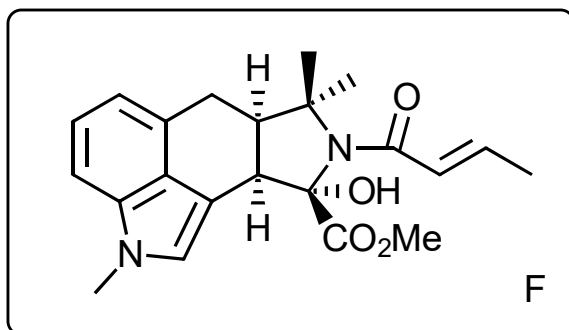


II

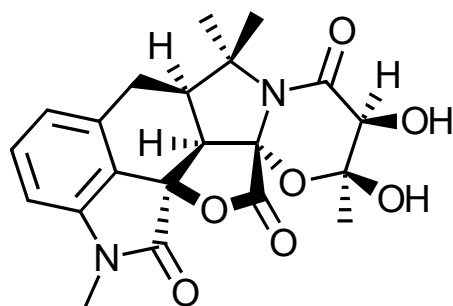
↓ 5, 6



↓ 7, 8



↓ 9,10



5)  $\text{TF}_2\text{NH}$ ,  $\text{CH}_2\text{Cl}_2$ ,  $35^\circ\text{C}$   
6)  $\text{Mg}$ ,  $\text{MeOH/THF}$ ,  $\text{rt}$

7) **III**,  $\text{DMAP}$ ,  $\text{EDC}^*\text{HCl}$ ,  $\text{CH}_2\text{Cl}_2$ ,  
8)  $\text{NaHMDS}$ ,  $\text{Ph}_3\text{P}$ ,  $\text{O}_2$ ,  $\text{THF}$ ,  $-78^\circ\text{C}$

9)  $\text{NCS}$ ,  $\text{HCl}$ ,  $t\text{BuOH/H}_2\text{O}$  (4:1)  
10)  $\text{RuCl}_3$ ,  $\text{Oxone}^\text{®}$ ,  $\text{NaHCO}_3$ ,  
 $\text{CH}_3\text{CN/H}_2\text{O/EtOAc}$

Different diastereomers are separated after step 6.

