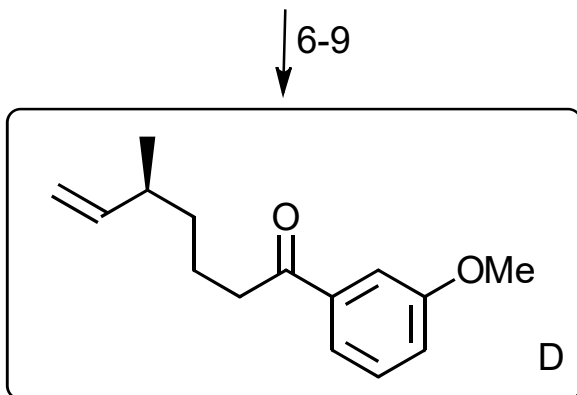
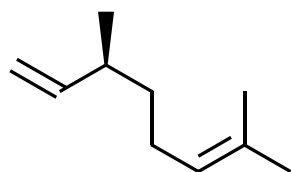
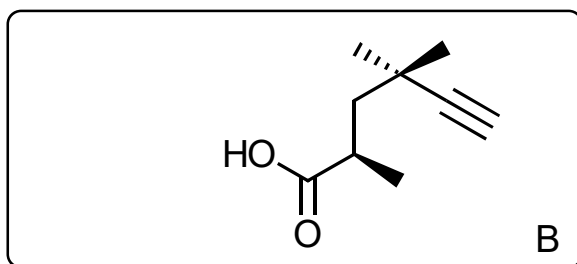
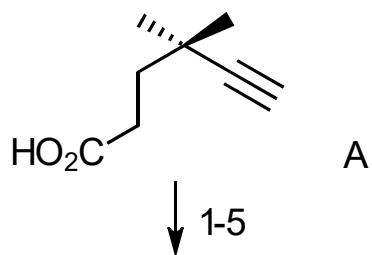


Synthesis Challenge #68

Synthetic Route to Oscillatoxin D and Its Analogues

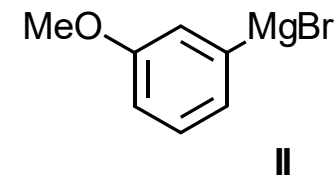
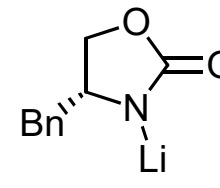
Y. Nokura, Y. Araki, A. Nakazaki, T. Nishikawa, *Org. Lett.* **2017**, ASAP, DOI: 10.1021/acs.orglett.7b03032
02.11.2017



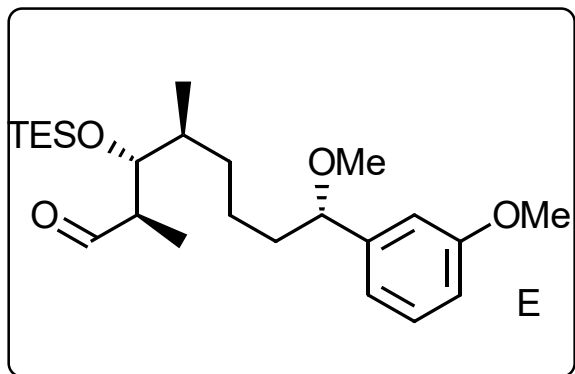
- 1) (COCl)₂, DMF, CH₂Cl₂
- 2) **I**
- 3) NaN(TMS)₂, THF
- 4) MeI
- 5) LiOH, H₂O₂, H₂O-THF

- 6) MCPBA, CH₂Cl₂
- 7) H₅IO₆, Et₂O
- 8) **II**, THF
- 9) Swern oxidation

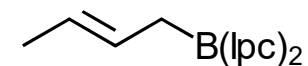
Please provide a synthesis for A.



↓ 10-15

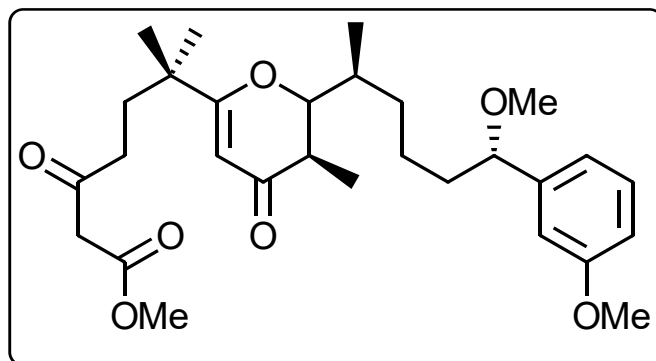


- 10) HCO_2H , Et_3N , (S,S)-Ru(II) cat
- 11) NaH, MeI
- 12) O_3 , pyridine, MeOH, then Ph_3P
- 13) III, $\text{BF}_3 \cdot \text{OEt}_2$, THF, then, H_2O_2 , NaOH
- 14) TESOTf, 2,6-lutidine
- 15) O_3 , pyridine, MeOH, then Ph_3P



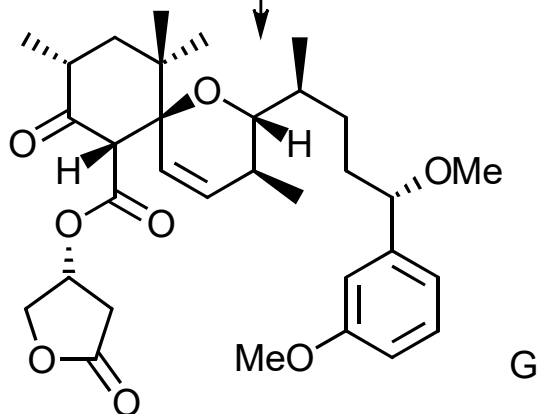
III

↓ 16-19

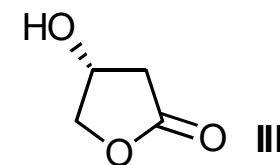


- 16) **B**, *n*-BuLi/THF, then **E**
- 17) DMP, CH_2Cl_2
- 18) Amberlyst-15, CH_2Cl_2
- 19) CDI, MeCN, then $\text{CH}_2(\text{CO}_2\text{Me})\text{CO}_2\text{K}$, MgCl_2 , Et_3N

↓ 23-25



- 20) TIPSCI, DBU, CH_2Cl_2
- 21) LiBH_4 , Et_2O
- 22) $\text{BF}_3 \cdot \text{OEt}_2$, CH_2Cl_2 , -78°C , MS 4 Å
- 23) III, DMAP, toluene, reflux



III