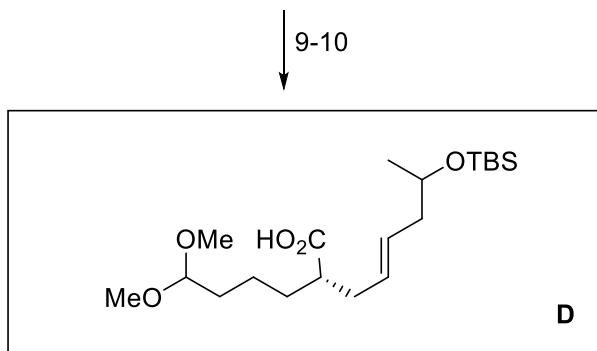
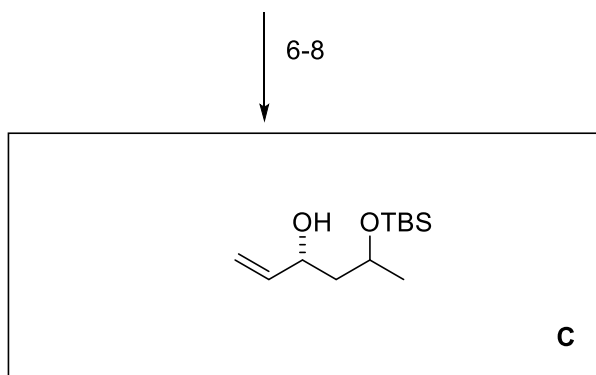
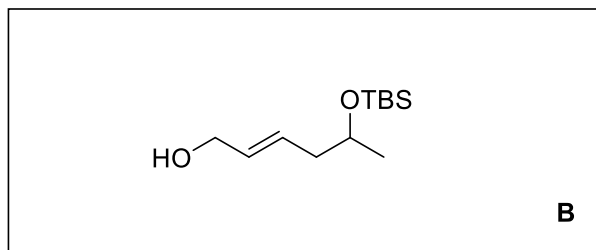
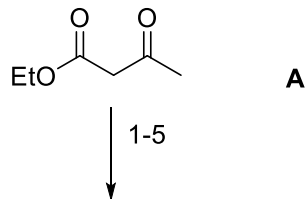


Synthesis Challenge 87

Concise Synthesis of (+)-[13C4]-Anatoxin-a by Dynamic Kinetic Resolution of a Cyclic Iminium Ion[†] J. J. Lacharity, A. K. Mailyan, K. Y. Chen, A. Zakarian, *Angew. Chem. Int. Ed.* **2020**, ASAP: doi.org/10.1002/anie.202004464

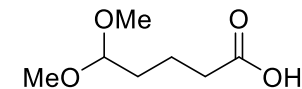
24.06.2020



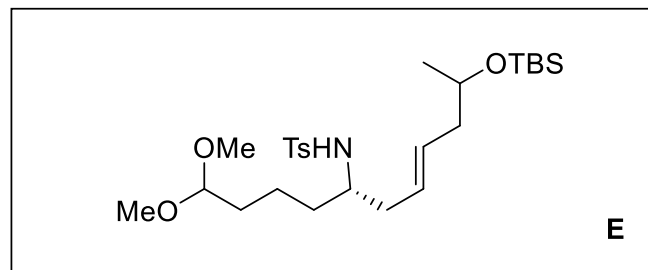
- 1) NaBH₄
- 2) TBSCl, ImH
- 3) DiBALH
- 4) EtO₂CCH₂PO(OEt)₂, NaH
- 5) DiBALH

- 6) Ti(O-*i*Pr)₄, (-)-DIPT, *t*BuOOH, 4 Å MS, CH₂Cl₂, -15°C
- 7) I₂, ImH
- 8) Zn, NaI

- 9) I, DCC, DMAP, CH₂Cl₂
- 10) LDA, HMPA, TBSCl; then MeOH, THF, -78°C to 0°C

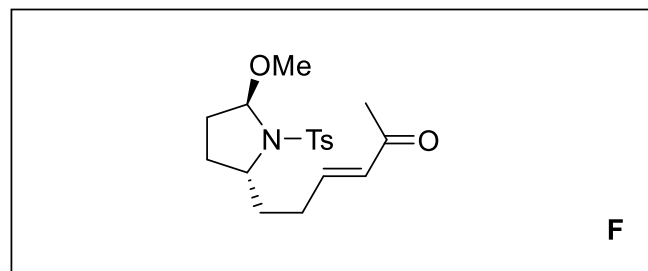


11-12



11) $(\text{PhO})_2\text{PON}_3$, $i\text{Pr}_2\text{NEt}$; NaOSiMe_3
12) TsCl , $i\text{Pr}_2\text{NEt}$

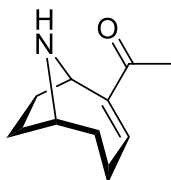
13-14



13) CSA , MeOH ; TEMPO , $\text{PhI}(\text{OAc})_2$, CH_2Cl_2
14) DBU , PhH , 23°C

15-16

* HCl



14) **II**, Me_3SiOTf , MeCN , -20°C
15) $(\text{HOCH}_2)_2$, PPTS , PhH , 80°C ;
 Mg , MeOH , 23°C ; 3 M HCl , 23°C

