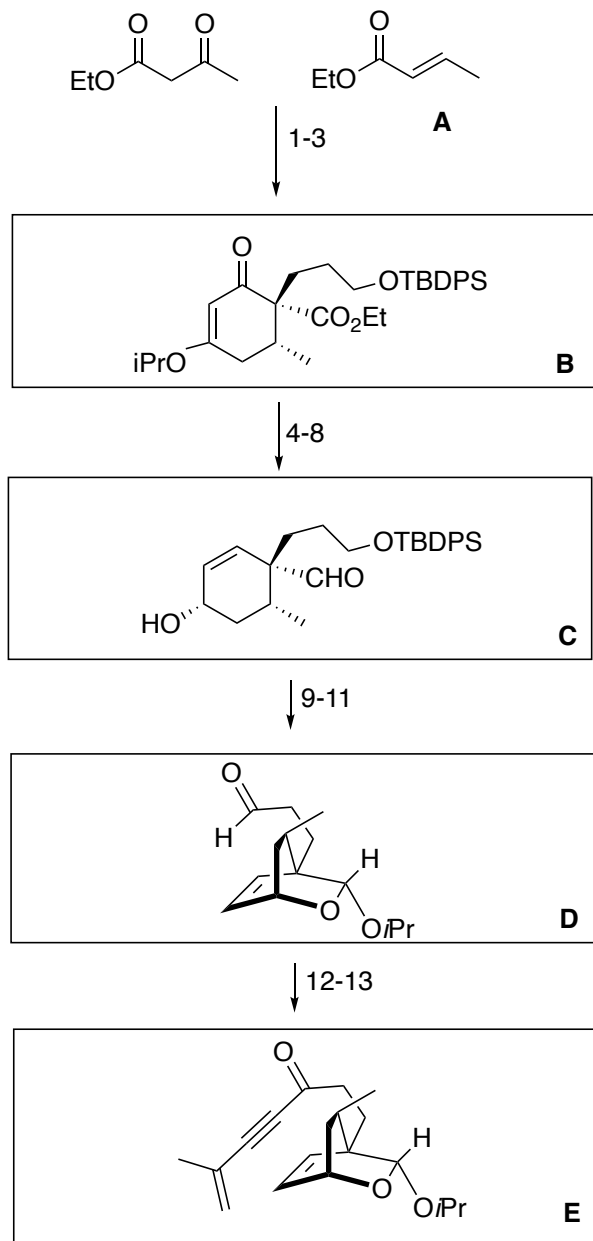


Synthesis Challenge 97

Total Synthesis of (+)-3-Deoxyfortalpinoid F, (+)-Fortalpinoid A, and (+)-Cephinoid H

Z. Ren, Z. Sun, Y. Li, X. Fan, M. Dai, Y. Wang, X. Hu, Angew. Chem. Int. Ed. 2021, ASAP, DOI:10.1002/anie.202108034
01.07.2021

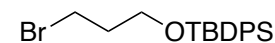


- 1) Na, EtOH, reflux
- 2) CSA, toluene, iPrOH, reflux
- 3) Cs₂CO₃, NaI, I, CH₃CN

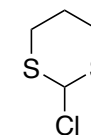
- 4) LiAlH₄, Et₂O, Et₂O, then 2 M HCl
- 5) NaBH₄, C₂Cl₃*7H₂O, MeOH, 0°C
- 6) TBSCl, imidazole, CH₂Cl₂, 0°C
- 7) DMP, NaHCO₃, CH₂Cl₂, rt
- 8) 2M HCl, THF

- 9) Cu(OTf)₂, MgSO₄, iPrOH/CH₂Cl₂
- 10) TBAF, THF, rt
- 11) TEMPO, PIDA, CH₂Cl₂

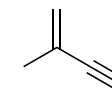
- 12) **II**, *n*BuLi, THF, -78°C
- 13) DMP, NaHCO₃, CH₂Cl₂



I

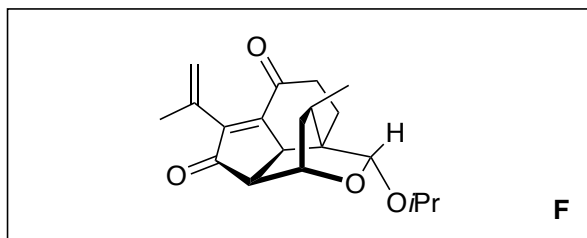


II

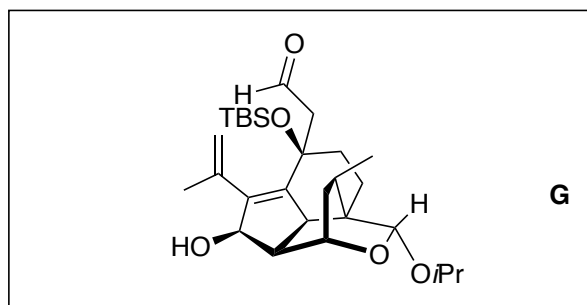


II

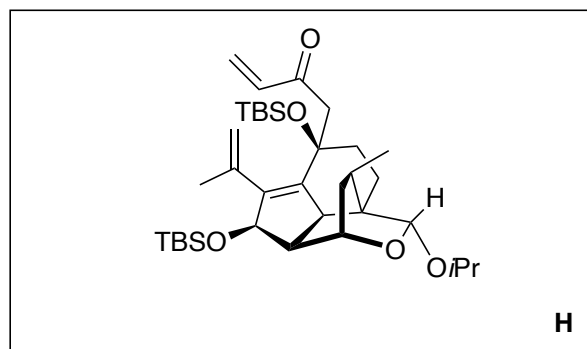
14



15-17



18-20



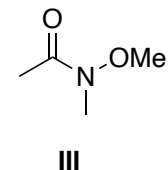
21-23

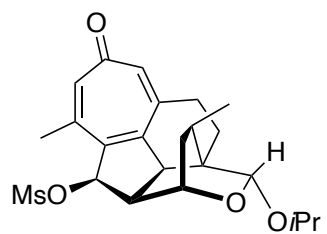
14) Co_2CO_8 , toluene, 60°C

15) **III**, LDA, THF, -78°C
 16) TMSOTf, CH_2Cl_2 , 2,6-lutidine, 0°C
 17) LiAlH_4 , THF, 0°C

18) TBSOTf, 2,6-lutidine, CH_2Cl_2 , 0°C
 19) CH_2CHMgBr , THF, 0°C
 20) DMP, NaHCO_3 , CH_2Cl_2

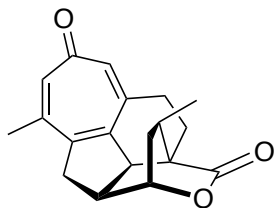
21) Grubbs II, toluene, reflux
 22) TBAF, THF, 0°C
 23) MsCl , Et_3N , DMAP, CH_2Cl_2 , rt





I

↓ 24-26



24) BuSnH, AIBN, toluene, reflux
 25) TsOH, 50°C, Me₂CO/H₂O
 26) Ag₂CO₃/Celite, toluene, reflux