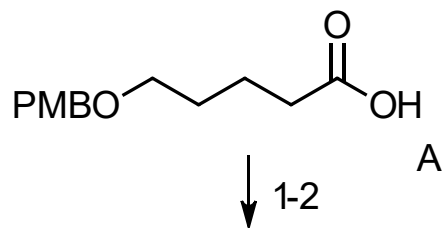


Synthesis Challenge # 67

AG Wegner

21.09.2017



↓ 3-7



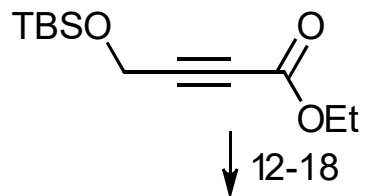
↓ 8-11



1) (*S,E*)-pent-3-en-2-ol, EDC·HCl,
Et₃N, DMAP, THF, RT, 16 h,
2) LiHMDS, Et₃N/toluene (3:1),
-78 °C to RT

3) TMSCHN₂, toluene/MeOH (5:1), RT
4) DIBALH, CH₂Cl₂, -78°C to -30°C
5) DMP, NaHCO₃, CH₂Cl₂, 0°C to RT
6) [Ph₃PCH₂I]⁺I⁻, NaHMDS, THF,
-78°C-RT; then NaHMDS, -78°C - RT
7) LiHMDS, THF, -78°C, 30 min;
then BnMe₂SiCl, -78°C - RT, 3 h,

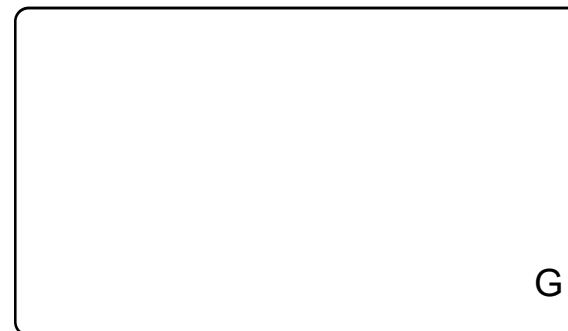
8) DDQ, CH₂Cl₂/H₂O (4:1), RT,
9) DMP, NaHCO₃, CH₂Cl₂, 0°C - RT
10) CBr₄, PPh₃, CH₂Cl₂, -30°C - 0°C,
11) nBuLi, THF, -78°C to RT



19-22



23-25



- 12) $\text{TMSCCCH}_2\text{MgBr}$, $\text{CuBr}\cdot\text{SMe}_2$,
- 13) DIBALH , CH_2Cl_2 , -78°C to RT
- 14) $\text{Ti}(\text{OiPr})_4$, D-(-)-diethyl tartrate, $t\text{BuOOH}$, 4 Å MS, CH_2Cl_2 , -20°C
- 15) AllylMgBr , THF, 0°C ,
- 16) $\text{SO}_3\cdot\text{py}$, DMSO, $i\text{Pr}_2\text{EtN}$, CH_2Cl_2
- 17) NaOCl , NaH_2PO_4 , 2-methylbut-2-ene, $t\text{BuOH}/\text{H}_2\text{O}$ (3:1), RT
- 18) BOPCl , py, MeCN, RT, 3 h,

- 19) MeMgBr , THF, -5°C to RT,
- 20) OsO_4 , NaIO_4 , 2,6-lutidine, dioxane/ H_2O (4.6:1), RT, 2 h,
- 21) camphorsulfonic acid, MeOH, RT,
- 22) $\text{SO}_3\cdot\text{py}$, DMSO, $i\text{Pr}_2\text{EtN}$

- 23) $(\text{PhO})_2\text{POCH}_2\text{CO}_2\text{Et}$, KHMDS , THF,
- 24) TFA, CH_2Cl_2 , 0°C
- 25) K_2CO_3 , MeOH, RT

D



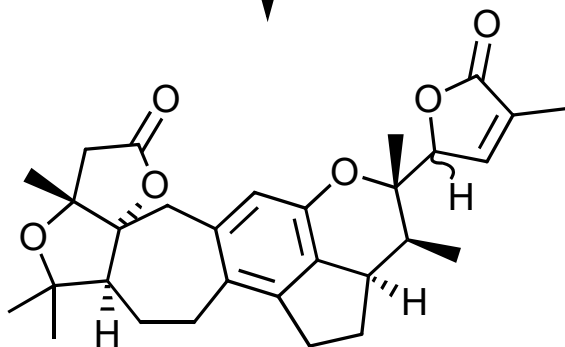
26-29



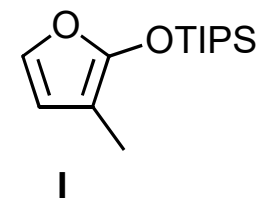
- 26) $n\text{BuLi}$, -78°C ; then add G, -78°C to -10°C
27) $[\text{CpCo}(\text{CO})_2]$ (20 mol%), PPh_3 (40 mol%), PhCl , MW (300 W), 150°C
28) TBAF, THF, RT, 30 min; then H_2O_2 , KHCO_3 , MeOH
29) Et_3SiH , ZnCl_2 , CH_2Cl_2 , RT



30-33



- 30) OsO_4 (2 mol%), NMO, acetone/ H_2O (3:1)
31) $\text{NaIO}_4/\text{SiO}_2$, CH_2Cl_2 , RT, 15 min
32) ZnCl_2 , SOCl_2 , CDCl_3
33) I, ZnCl_2 , CH_2Cl_2



Please provide a 3D drawing of the final product.