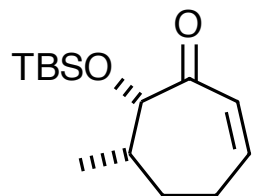


Synthesis Challenge # 32

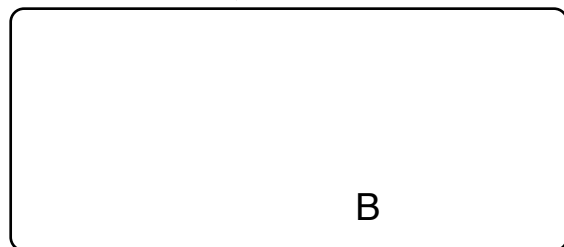
AG Wegner

23.04.2015



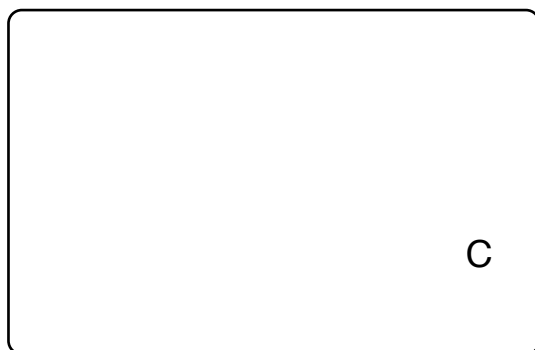
A

1-3



B

4-8

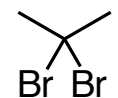


C

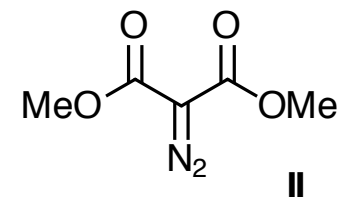
- 1) allyl bromide, Li, THF, 0-25°C, 2 h
- 2) PCC (2.0 equiv), SiO₂, CH₂Cl₂
- 3) TMSOTf, Et₃N, CH₂Cl₂, then I, *n*BuLi, Et₂O

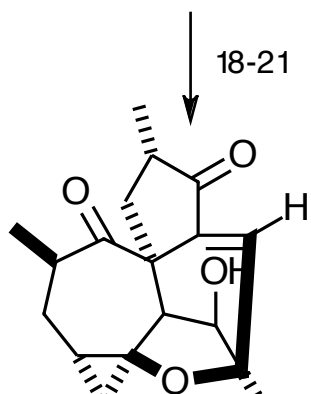
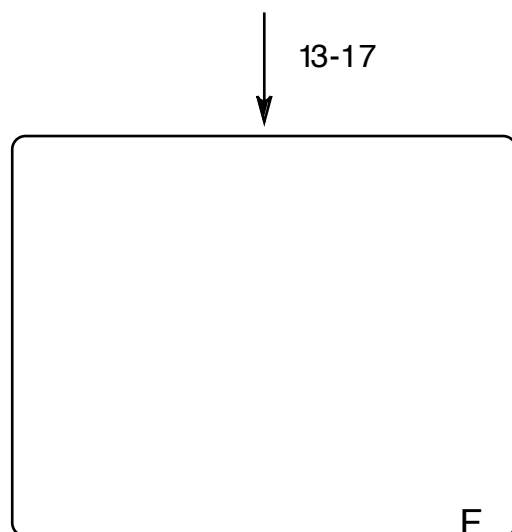
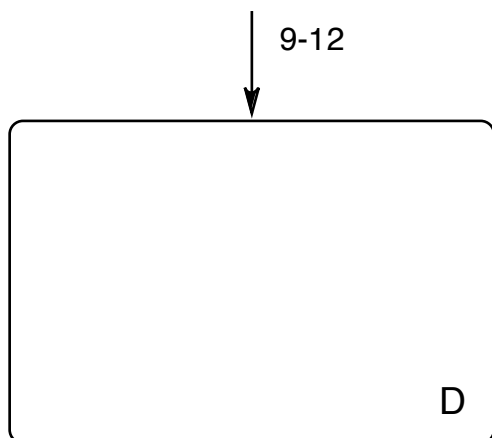
- 4) [Rh₂(OAc)₄] (cat.), II, benzene
- 5) NaH, MeI, THF
- 6) LiAlH₄, THF
- 7) Ac₂O, Et₃N, CH₂Cl₂ (10:1 d.r. at C6)
- 8) Dess–Martin periodinane, NaHCO₃

Please design a synthesis of A starting from a commercially available starting material.

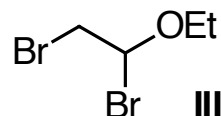


Please, provide a detailed mechanism for step 3.





- 9) HF·py (10 equiv), MeCN
 10) **III**, PhNMe₂, CH₂Cl₂, (1.5:1 d.r. at C3)
 12) Sml₂, HMPA, *t*BuOH
 13) Bz₂O, Et₃N, 4-DMAP, CH₂Cl₂



- 13) *p*-TsOH, acetone/H₂O (4 :1),
 14) Sml₂, HMPA, THF
 15) Dess–Martin periodinane, NaHCO₃
 16) KOH, benzene, then the addition
 of MeOH, (dr = 6.3 :1)
 17) DBU, toluene

- 18) TPAP (cat.), NMO, CH₂Cl₂
 19) NaBH₄, MeOH
 20) PCC, CH₂Cl₂
 21) LiOH, toluene

In step 9 is more happening, than "just" a deprotection. Please provide a mechanism. Please, provide a detailed mechanism for step 11). What is the name of the reaction in step 12)?

Please, provide a detailed mechanism for step 16).

Please provide a nice 3D drawing of G.