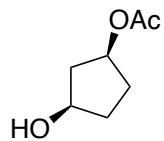


Synthesis Challenge 105

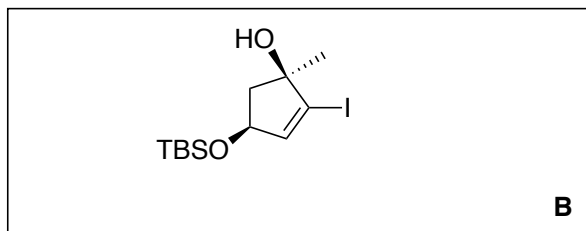
AG Wegner

20.07.2023

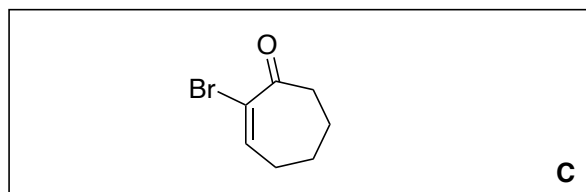


↓ ???

A

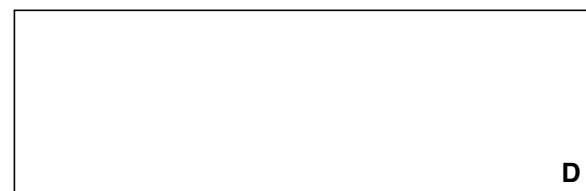


B



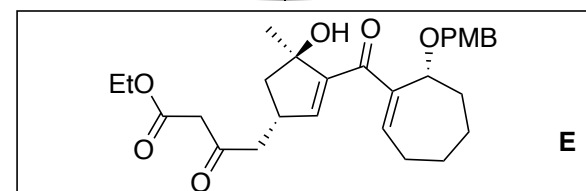
C

↓ 1-3



D

↓ 4-7

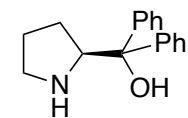


E

Please draft a synthesis of **A**

- 1) Cat **I**, B(OMe)₃ (20 mol%), BH₃*PhNET₃, THF, rt
- 2) NaH, PMBCl, TBAI, DMF
- 3) *n*BuLi, THF, then DFF, THF -78°C

- 4) **B**, CH₃Li, *n*BuLi, THF, -78°C, then addition of **D**
- 5) IBX, DMSO
- 6) Et₃N * 3HF, THF
- 7) ClCOCH₂CO₂Et, pyridine, DCM



I

↓ 8-10



- 8) MTBD, MeCN
- 9) TESOTf, Et₃N, DCM
- 10) DDQ, DCM/H₂O

↓ 11-14



- 11) MTBD, THF
- 12) TESOTf, Et₃N, DCM
- 13) NBS, acetone/H₂O
- 14) TBX, MeCN, reflux

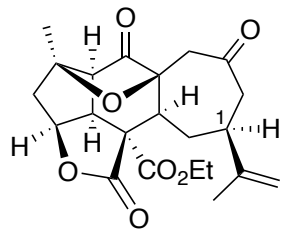
↓ 15-16



- 15) InBr₃ (10mol%), Si(OEt)₄, NaHSO₄, DCM/THF
- 16) Et₃N, TBSOTf, TCM, rt, then Pd(OAc)₂, DMSO, O₂

MTBD = 7-methyl-1,5,7-triazabicyclo-[4.4.0]dec-5-ene

↓17-18



17) *iso*-propenyl-MgBr, 2-Th(CN)CuLi, THF
18) Me₃SnOH, SCM, 80°C

2-Th(CN)CuLi = lithium 2-thienylcyanocuprate

Please, provide a beautiful 3D drawing of the final product!

Please device a synthetic procedure to invert the stereochemistry at C1!