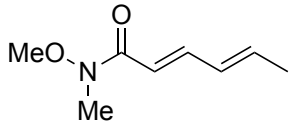
Total Synthesis of Abyssomicin C and atrop-Abyssomicin C

University of Zurich[UZH]

Gademann Group
Antoine Versini
31/08/2021

K. C. Nicolaou and Scott. T. Harrison, *Angew. Chem. Int. Ed.* **2006**, *45*, 3256-3260.

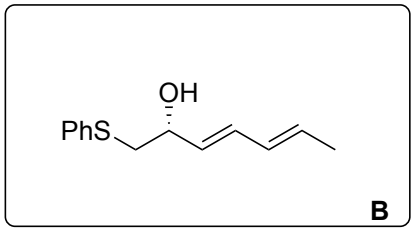


A

*Which type of compound is **A** ?*
Weinreb amide

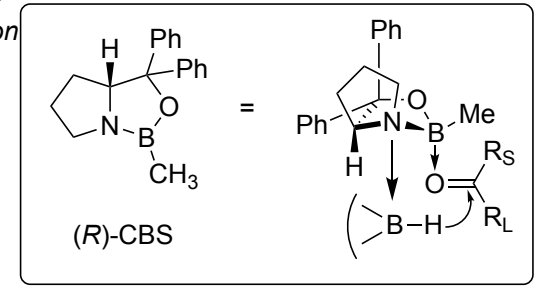
1) i) Thioanisole, DABCO,*n*BuLi
THF, 0 °C, 1h
ii) - 78 °C, **A**, 45 min, **80 %**

2) (*R*)-CBS, catecholborane,
DCM, - 78 °C, 24 h, **89 %**, 90 % *ee*



B

Name of the second reaction ?
Corey-Bakshi-Shibata reduction

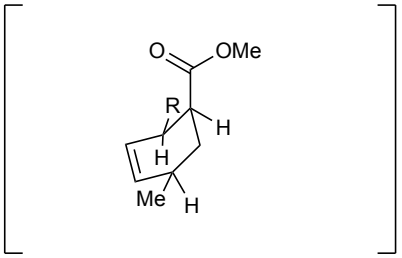


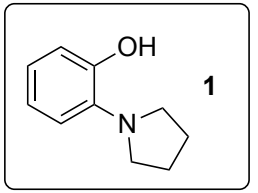
(*R*)-CBS

draw the approach
of the ketone with CBS

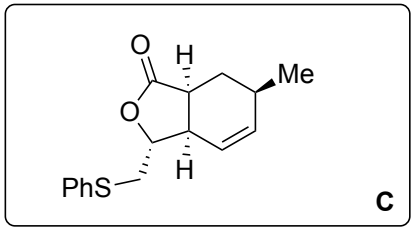
i) **1**, MeMgBr
Toluene, 0 °C

ii) methyl acrylate
55 °C, 24 h
iii) wash 3N HCl
80 %





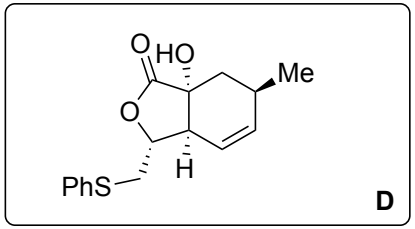
1



C

i) LiHMDS
THF, - 78 °C, 0.5 h

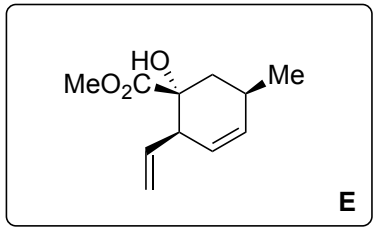
ii) $(EtO)_3P$, bubbling O_2
74%



D

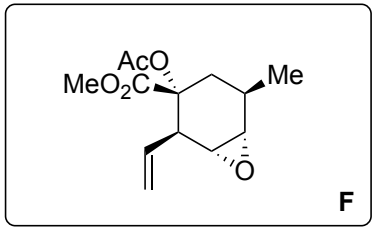
i) Li, 4,4'-di-*tert*-butylbiphenyl
THF, 0 °C, 2 h
ii) - 40 °C, **D**, 3 h

iii) MeOH, quench, remove Li
concentrated
iv) K_2CO_3, MeI
DMF, 60 °C, 10 min
97 %



E

1) $VO(OEt)_3$
*t*BuOOH
DCM, rt, 3 h
90 %
2) Ac_2O, DMAP
Et_3N, rt, 3 h
93 %

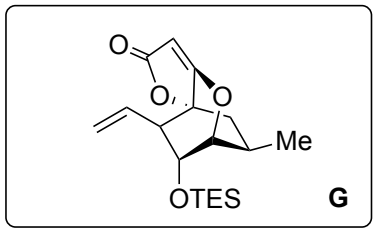


F

Name ? Dieckmann cyclisation

1) i) LiHMDS, THF, - 78 °C to rt
ii) sat. aq. NH_4Cl, reflux, 2 h

2) TESCl, imid., DMAP
DMF, rt, 2 h
97 % (two steps)



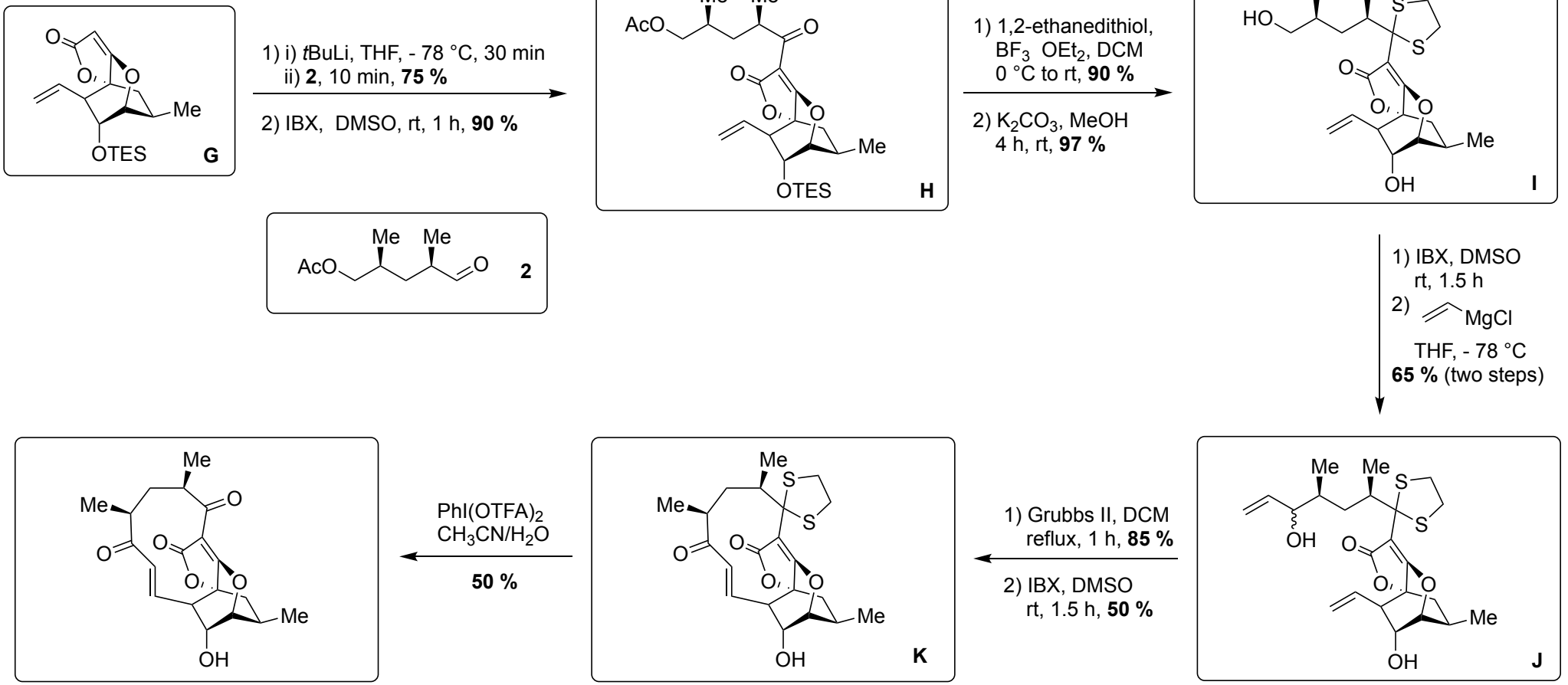
G

University of Zurich[UZH]

Total Synthesis of Abyssomicin C and atrop-Abyssomicin C

K. C. Nicolaou and Scott. T. Harrison, *Angew. Chem. Int. Ed.* **2006**, *45*, 3256-3260.

Gademann Group
Antoine Versini
31/08/2021



single hydroxy enone