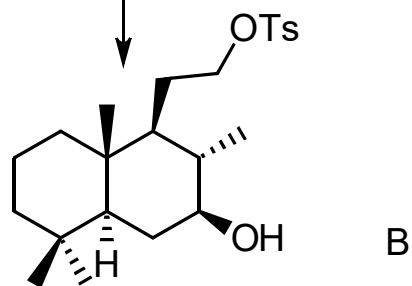
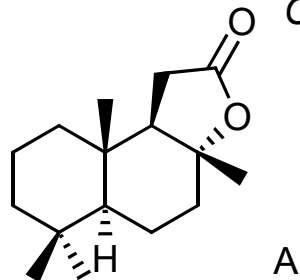
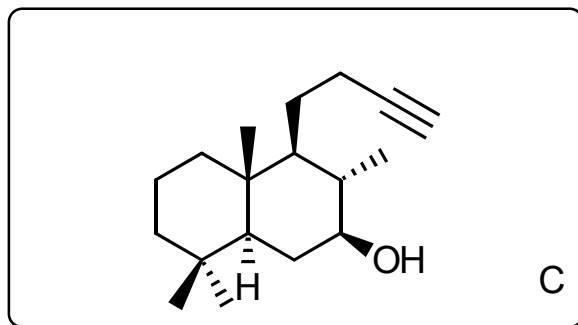


Synthesis Challenge # 61

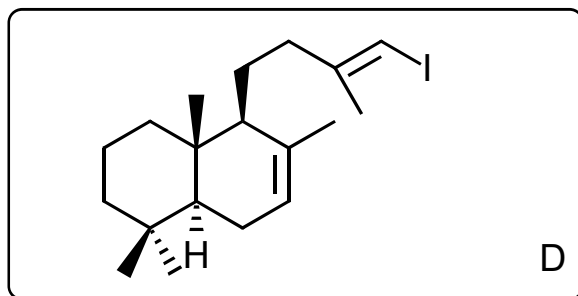
Total Synthesis and Stereochemical Assignment of Actinoranone, Y. Guo, M. Zhao, Z. Xu, T. Ye,
Chem. Eur. J. **2017**, *23*, ASAP, DOI: 10.1002/chem.201700476
02.03.2017



↓ 3-5



↓ 6-7



multiple steps, then:

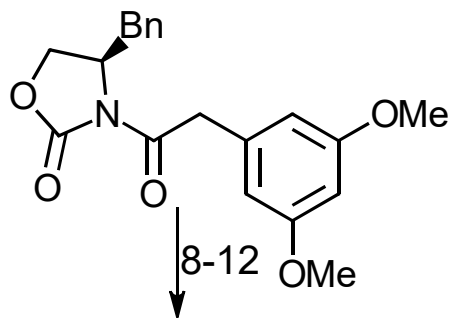
- 1) TBAF, THF
- 2) TsCl, NEt₃, CH₂Cl₂

- 3) TESOTf, 2,6-lutidine, CH₂Cl₂,
-78 to -50 °C
- 4) NaI, acetone, reflux
- 5) TMS acetylene, *n*BuLi, THF, HMPA;
TBAF, THF

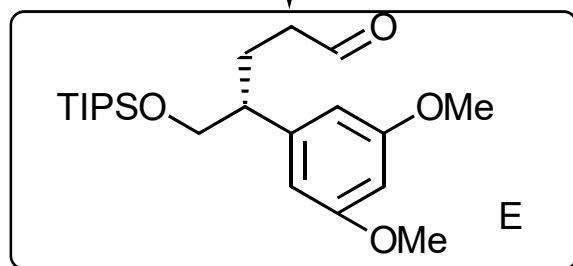
- 6) AlMe₃, ZrCp₂Cl₂, then I₂, CH₂Cl₂
- 7) MsCl, NEt₃, DMAP;
LiBr, Li₂CO₃, DMF, 150°C

Please provide a synthesis strategy
from A to B.

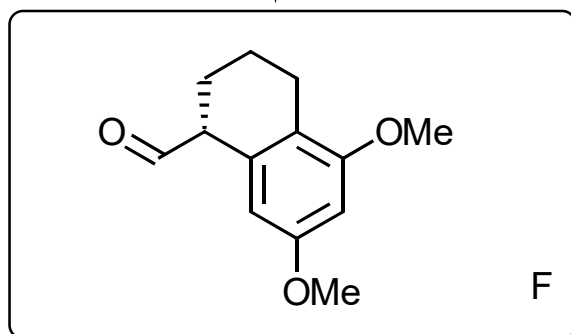
S. Poigny, S. Nouri, A. Chiaroni,
M. Guyot, M. Samadi, *J. Org. Chem.*
2001, *66*, 7263.



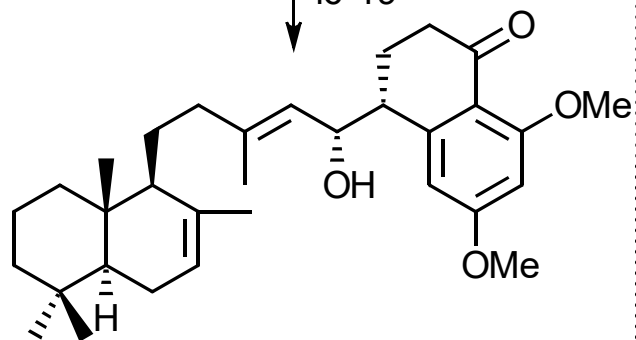
- 8) LiHMDS, allyl bromide, THF, -78 to -30°C
- 9) LiBH₄, THF/MeOH, 0°C-RT
- 10) TIPSCl, imidazole, CH₂Cl₂
- 11) 9-BBN, THF ; then H₂O₂, Na₂CO₃ (aq.)
- 12) SO₃·Py, DMSO, NEt₃



- 13) *p*-TSA, toluene
- 14) Pd/C, H₂, EtOH ;
- 15) TBAF, THF; Dess-Martin periodinane, CH₂Cl₂, NaHCO₃



- 16) D, *n*BuLi, Et₂O, then F, -78°C to -60°C, d.r.=5:1
- 17) PNB-Cl, DMAP, NEt₃, CH₂Cl₂
- 18) DDQ, dioxane, buffer pH 7.0
- 19) LiOH, THF/H₂O



TMCDA = *trans*-*N,N,N',N'*-tetramethyl
1,2-diamino-cyclohexane

PNB = *p*-nitrobenzoyl chloride