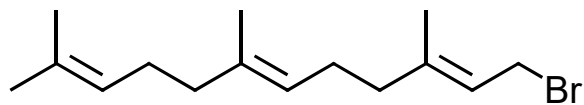
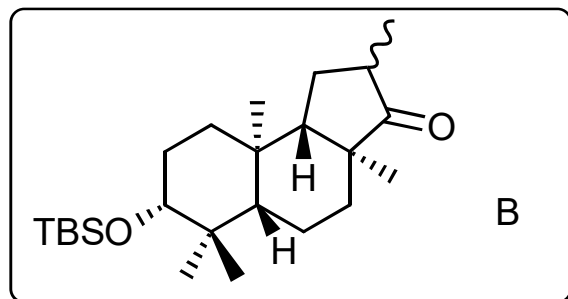


Synthesis Challenge # 55  
Annulative Methods Enable a Total Synthesis of the Complex  
Meroterpene Berkeleyone A

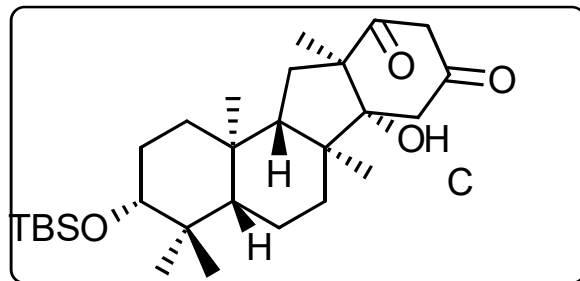
C. P. Ting, G. Xu, X. Zeng, T. J. Maimone, *J. Am. Chem. Soc.* **2016**, ASAP, DOI: 10.1021/jacs.6b10397  
17.11.2016



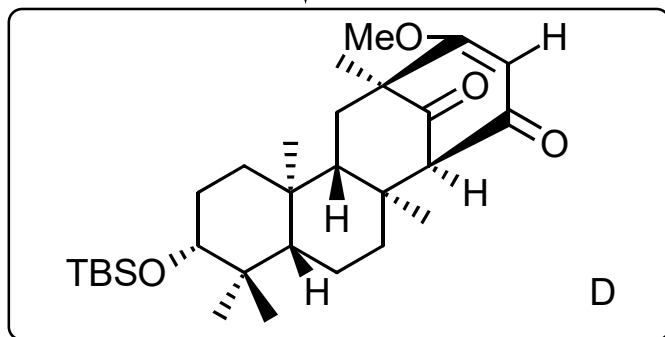
1-4



5



6-7

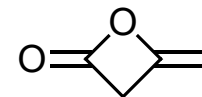


- 1) LDA, EtCN, HMPA/THF
- 2) NBS, H<sub>2</sub>O; MeOH, K<sub>2</sub>CO<sub>3</sub>
- 3) Cpp<sub>2</sub>TiCl<sub>2</sub>, Zn, heat
- 4) TBSCl, imidazole

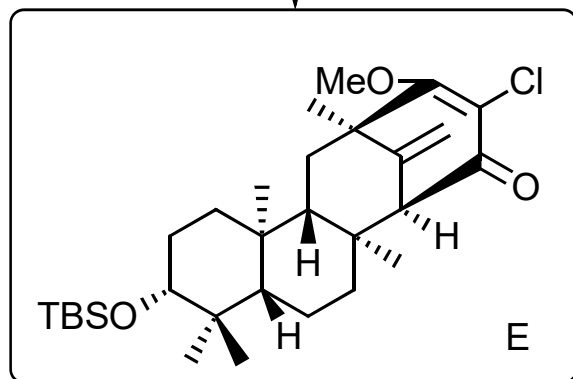
5) LTMP, I, THF/Et<sub>2</sub>O

- 6) TMSCHN<sub>2</sub>
- 7) PhI(OAc)<sub>2</sub>, KOH/MeOH

Please, provide a synthesis of **A**.

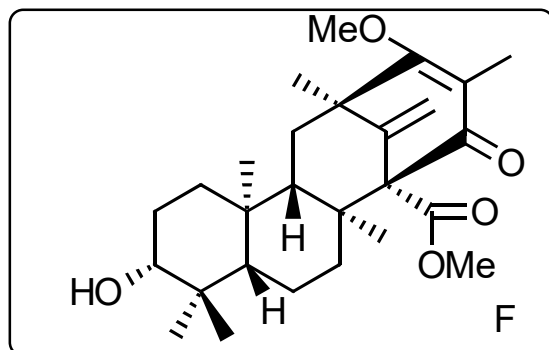


8-9



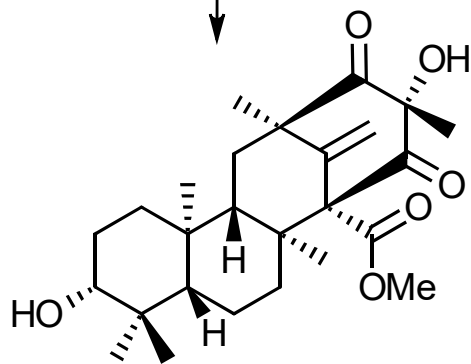
8)  $\text{H}_2\text{C}=\text{P}(\text{Ph})_3$ , heat  
9) LTMP, TsCl

10-12



10) LDA,  $\text{ClCO}_2\text{Me}$   
11)  $\text{MeB}(\text{OH})_2$ ,  $\text{K}_3\text{PO}_4$ ,  $\text{Pd}(\text{OAc})_2$ /  
SPhos  
12) TsOH, MeOH

13



13) LiCl, DMSO, heat,  
then add mCPBA