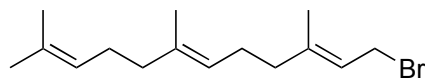


## Total Syntheses of Berkeleyone A and Terretinin L

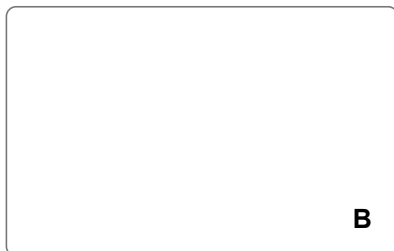
a) G. Xu, M. Elkin, D. J. Tantillo, T. R. Newhouse, T. J. Maimone, *Angew. Chem., Int. Ed.* **2017**, 56, 12498; b) C. P. Ting, G. Xu, X. Zeng, T. J. Maimone, *J. Am. Chem. Soc.* **2016**, 138, 14868.



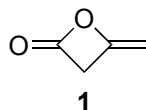
1 – 5



6 – 12



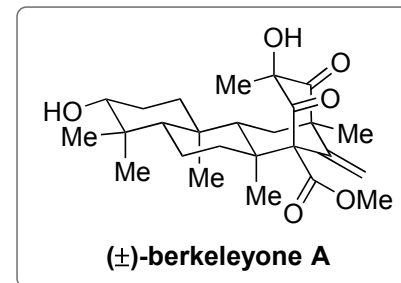
- 1) LDA, EtCN
- 2) NBS, H<sub>2</sub>O, then K<sub>2</sub>CO<sub>3</sub>
- 3) Cp<sub>2</sub>TiCl<sub>2</sub>, Zn
- 4) TBSCl, imidazole
- 5) LTMP, **1**



- 3) Mechanism?
- 5) pK<sub>A</sub> of TMP?

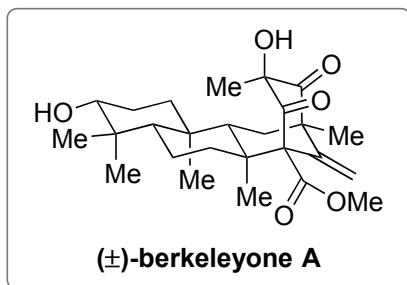
- 6) TMSCHN<sub>2</sub>
- 7) PhI(OAc)<sub>2</sub>, KOH/MeOH
- 8) Ph<sub>3</sub>PCH<sub>2</sub>
- 9) LTMP, TsCl
- 10) LDA, ClCO<sub>2</sub>Me
- 11) MeB(OH)<sub>2</sub>, K<sub>3</sub>PO<sub>4</sub>, Pd(OAc)<sub>2</sub>/SPhos
- 12) TsOH, MeOH

- 7) Mechanism?
- 11) Name of the reaction?



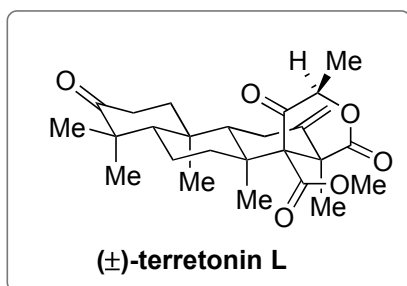
**B**

13



**B**

14 – 18



13) LiCl,  $\Delta$ , then *m*-CPBA

14) PCC  
15) **2** (10 mol%), PhSiH<sub>3</sub>, TsCl  
16) LiCl,  $\Delta$   
17) MMPP  
18) NaOMe (10 mol%)

15) Mechanism?  
17) Structure of MMPP?  
18) Explain how the final product is formed.

