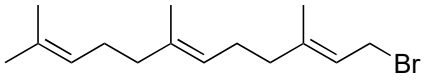
Total Syntheses of Berkeleyone A and Terretonin L

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.



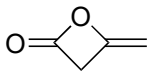
1 – 5

A

6 – 12

B

1) LDA, EtCN
2) NBS, H_2O, *then* K_2CO_3
3) Cp_2TiCl_2, Zn
4) TBSCl, imH
5) LTMP, **1**

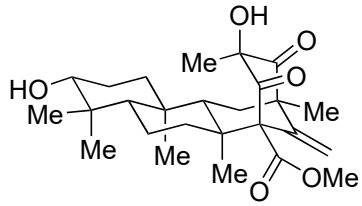


1

6) $TMSCHN_2$
7) $PhI(OAc)_2$, KOH/MeOH
8) Ph_3PCH_2
9) LTMP, TsCl
10) LDA, $ClCO_2Me$
11) $MeB(OH)_2$, K_3PO_4, $Pd(OAc)_2$/SPhos
12) TsOH, MeOH

3) Mechanism?
5) pK_A of TMP?

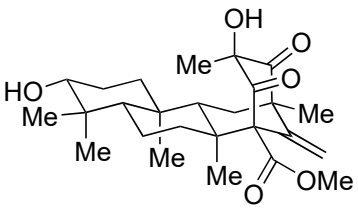
7) Mechanism?
11) Name of the reaction?



(±)-berkeleyone A

B

13

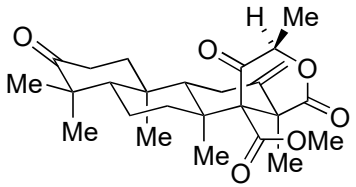


(±)-berkeleyone A

13) LiCl, Δ, *then m*-CPBA

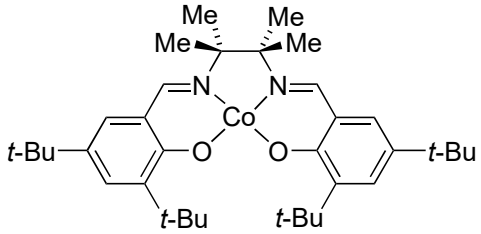
B

14 – 18



(±)-terretonin L

14) PCC
15) **2** (10 mol%), $PhSiH_3$, TsCl
16) LiCl, Δ
17) MMPP
18) NaOMe (10 mol%)



2

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