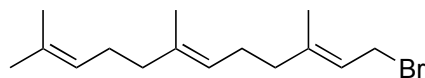
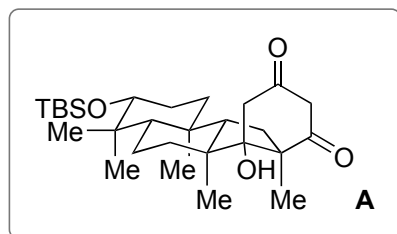


Total Syntheses of Berkeleyone A and Terretonin L

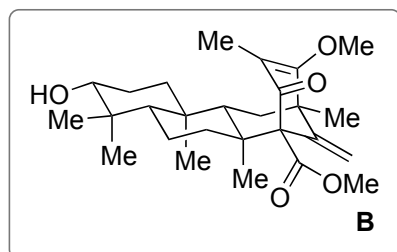
a) G. Xu, M. Elkin, D. J. Tantillo, T. R. Newhouse, T. J. Maimone, *Angew. Chem., Int. Ed.* **2017**, *56*, 12498; b) C. P. Ting, G. Xu, X. Zeng, T. J. Maimone, *J. Am. Chem. Soc.* **2016**, *138*, 14868.



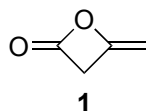
1 – 5



6 – 12



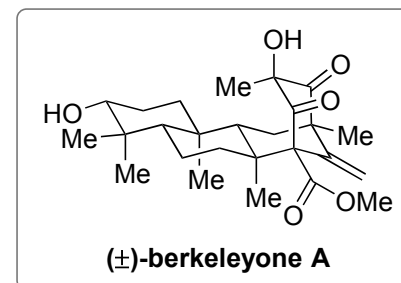
- 1) LDA, EtCN
- 2) NBS, H₂O, then K₂CO₃
- 3) Cp₂TiCl₂, Zn
- 4) TBSCl, imidazole
- 5) LTMP, **1**



- 3) Mechanism? see below
- 5) pK_A of TMP?
pK_A(TMP) ≈ 37 (DMSO)

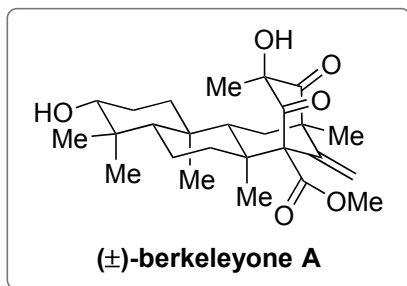
- 6) TMSCHN₂
- 7) PhI(OAc)₂, KOH/MeOH
- 8) Ph₃PCH₂
- 9) LTMP, TsCl
- 10) LDA, ClCO₂Me
- 11) MeB(OH)₂, K₃PO₄, Pd(OAc)₂/SPhos
- 12) TsOH, MeOH

- 7) Mechanism? see below
- 11) Name of the reaction?
Suzuki–Miyaura coupling



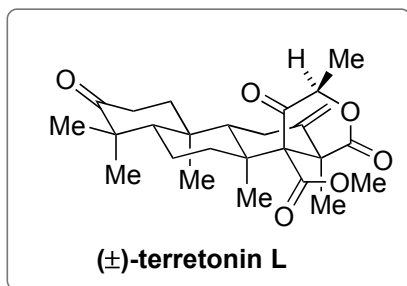
B

13



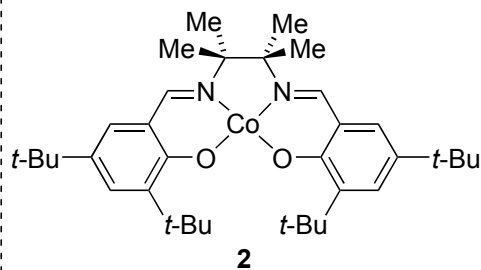
B

14 – 18



13) LiCl, Δ , then *m*-CPBA

- 14) PCC
15) **2** (10 mol%), PhSiH₃, TsCl
16) LiCl, Δ
17) MMPP
18) NaOMe (10 mol%)



15) Mechanism? see below

17) Structure of MMPP?

18) Explain how the final product is formed.

Retro-Claisen/intramolecular esterification cascade

