Total Synthesis of (±)-Berkeleyone A

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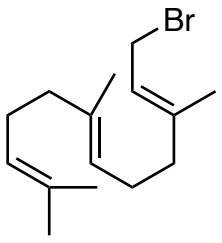
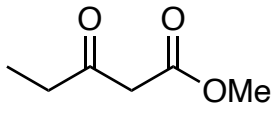


1) NaH, *n*-BuLi, **1**, THF, -45 to 0 °C
2) *m*-CPBA, CH_2Cl_2, 0 °C
3) HCl, $FeCl_3$, CH_2Cl_2/Et_2O, -78 to 23 °C
4) 2,6-lutidine, TBSOTf, CH_2Cl_2, 0 to 23 °C
5) Cs_2CO_3, **2**, DMA, 40 °C
6) AcOH, 120 °C, *then* $Mn(OAc)_3 \cdot 2H_2O$, 60 °C



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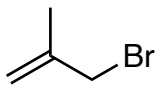

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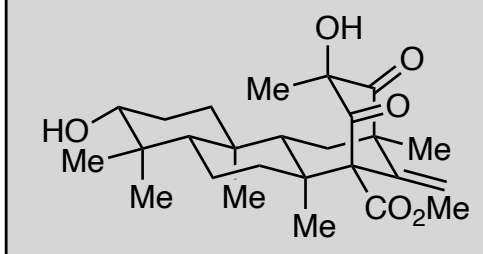
3) *Hint:* Three rings formed
6) *Hint:* Multiple transformations, start with olefin isomerization

↓ 1-6

A

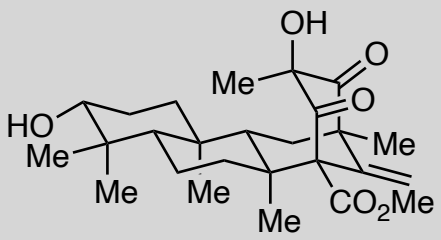


(±)-Berkeleyone A

↓ 7-13

7) Ph_3PCH_2, PhMe, 90 °C
8) CrO_3, 3,5-dimethylpyrazole, CH_2Cl_2, -20 to 23 °C
9) SmI_2, TESOTf, H_2O, THF, -78 °C
10) $PhNTf_2$, KHMDS, THF/PhMe, 0 °C
11) SeO_2, NaH_2PO_4, 1,4-dioxane, 110 °C
12) DMP, CH_2Cl_2, 0 to 23 °C, *then* aq. HCl, aq. NaOH
13) *m*-CPBA, CH_2Cl_2, 0 °C

11) Name of reaction?



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