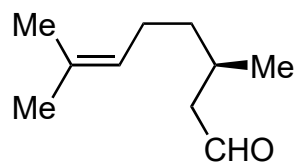
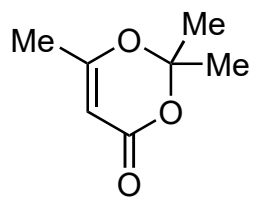


An eight-step gram-scale synthesis of (-)-jiadifenolide

H. Lu, M. Martinez, R. Shenvi
Nature Chemistry 2015, 7, 604–607.



1-4



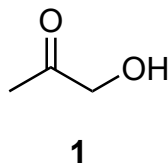
5-6



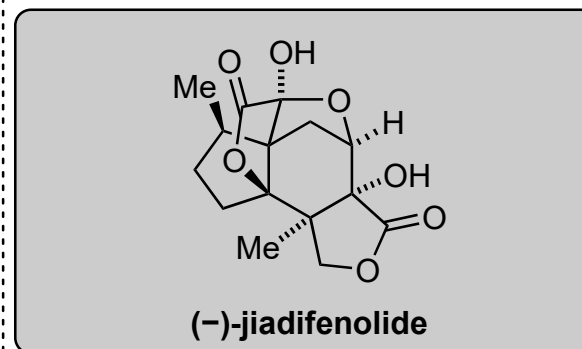
1. P(OPh)_3 , Br_2 , TEA
2. *t*-BuOK, 18-Crown-6, 70°C
3. O_3 , -78°C
4. Mo(CO)_6 , Bu_4NBr , 90°C

1. Name the starting material.
4. Name the reaction.

5. **1**, 120°C
6. SiO_2



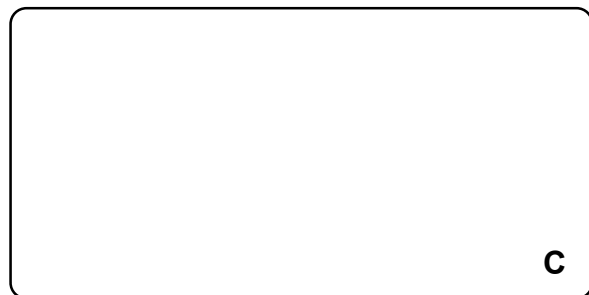
5. Hint: an acylketene intermediate is generated.



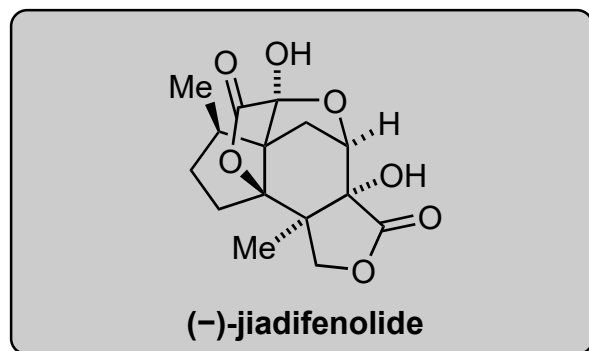
(-)-jiadifenolide

A + B

7



8-11



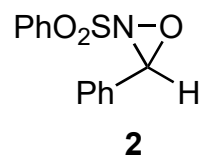
7. **A**, LDA, then **B**, then $\text{Ti}(\text{O}i\text{-Pr})_4$, LDA

8. m-CPBA

9. $\text{Me}_4\text{NBH}(\text{OAc})_3$, AcOH

10. LDA, CBr_4

11. NaHMDS, **2**



7. *Hint: a double Michael addition*

11. Name the reagent.