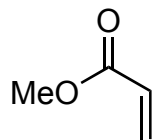


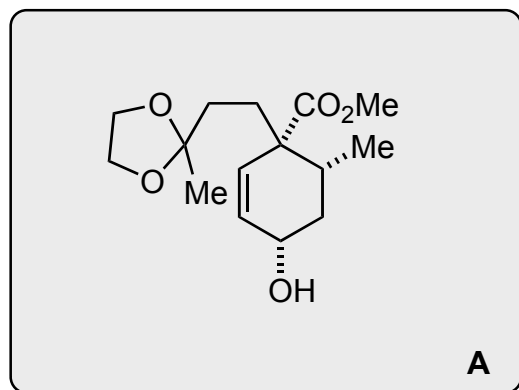
Stereoselective Synthesis of (±)-Cephanolide B

A. Li, Z. He, B. Liu, Z. Yang*, Z. Zhang*

Org. Lett. **2021**, *23*, 9237-9240.



1-5

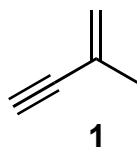


6-11



- 1) Acetaldehyde, DABCO
- 2) 2-Methoxypropene, Hg(OAc)₂, Et₃N, 90°C
- 3) Danishefsky's diene, mesitylene, 200°C then 0.5N HCl
- 4) Ethylene glycol, PTSA
- 5) NaBH₄, CeCl₃·7H₂O

- 6) NaOH then HCl
- 7) EDCI, DMAP
- 8) LDA, Comin's reagent, -98°C
- 9) DIBAL-H, -78°C
- 10) Cu(OTf)₂, *i*-PrOH/DCM, 50°C
- 11) **1**, PdCl₂(PPh₃)₂, CuI, Et₃N, 50°C



1) Name of reaction?

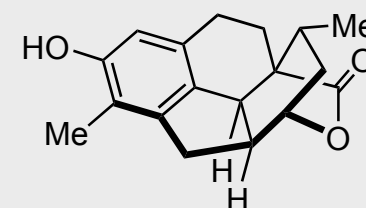
Morita-Baylis-Hillman

2) *Hint: 2 step process (intermolecular reaction then intramolecular)*

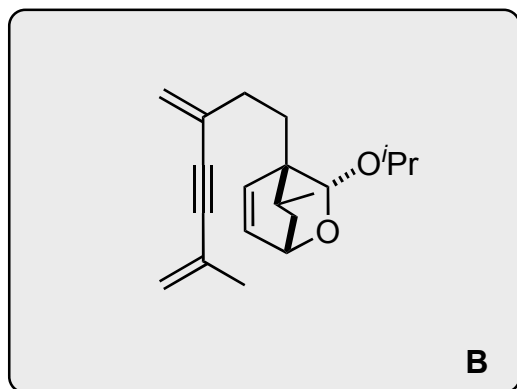
5) Name of reaction?

Luche reduction

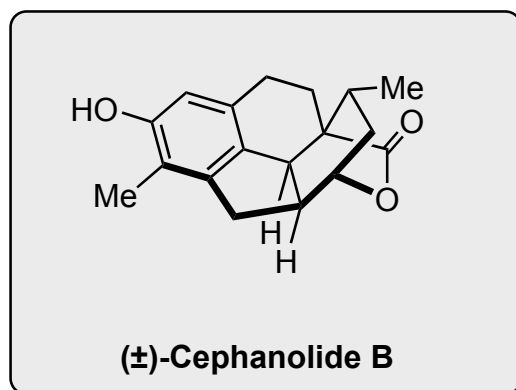
10) *Hint: i-PrOH participates in the reaction*



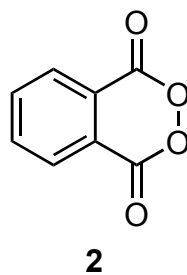
(±)-Cephanolide B



12-15



- 12) $\text{Co}_2(\text{CO})_8$, PhMe then DBU, O_2
- 13) $\text{BF}_3 \cdot \text{Et}_2\text{O}$, *m*-CPBA
- 14) TfOH, Et_3SiH
- 15) **2**, HFIP, 60°C



12) *Hint: starts with a name reaction and then another two transformations happen*

15) Identify the byproduct formed in the final step

