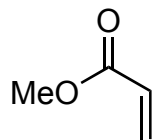


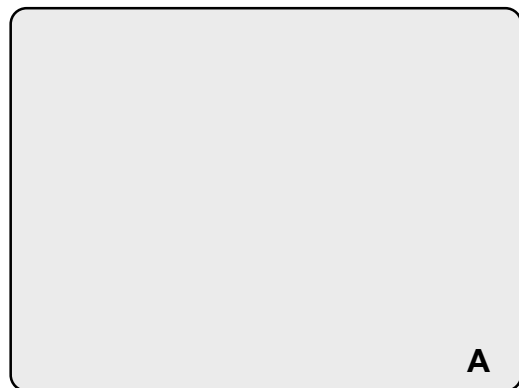
Stereoselective Synthesis of (\pm)-Cephanolide B

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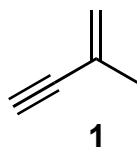


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- 1) Acetaldehyde, DABCO
- 2) 2-Methoxypropene, $\text{Hg}(\text{OAc})_2$, Et_3N , 90°C
- 3) Danishefsky's diene, mesitylene, 200°C then 0.5N HCl
- 4) Ethylene glycol, PTSA
- 5) NaBH_4 , $\text{CeCl}_3 \cdot 7\text{H}_2\text{O}$

- 6) NaOH then HCl
- 7) EDCI, DMAP
- 8) LDA, Comin's reagent, -98°C
- 9) DIBAL-H, -78°C
- 10) $\text{Cu}(\text{OTf})_2$, *i*-PrOH/DCM, 50°C
- 11) **1**, $\text{PdCl}_2(\text{PPh}_3)_2$, CuI, Et_3N , 50°C

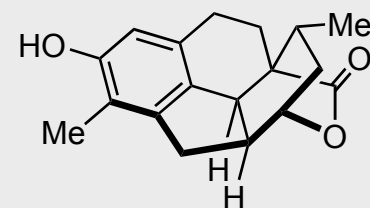


1) Name of reaction?

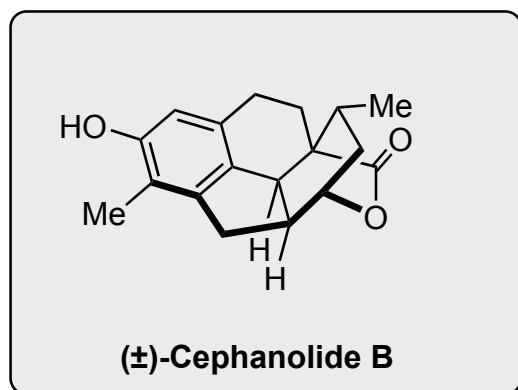
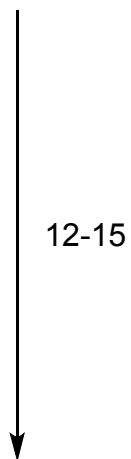
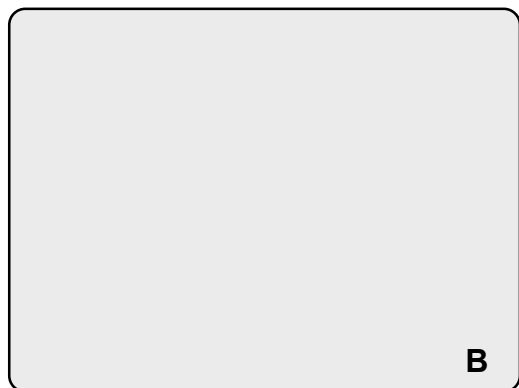
2) *Hint: 2 step process (intermolecular reaction then intramolecular)*

5) Name of reaction?

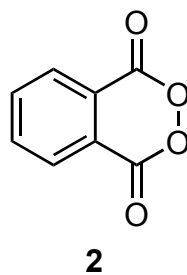
10) *Hint: i-PrOH participates in the reaction*



(\pm)-Cephanolide B



- 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