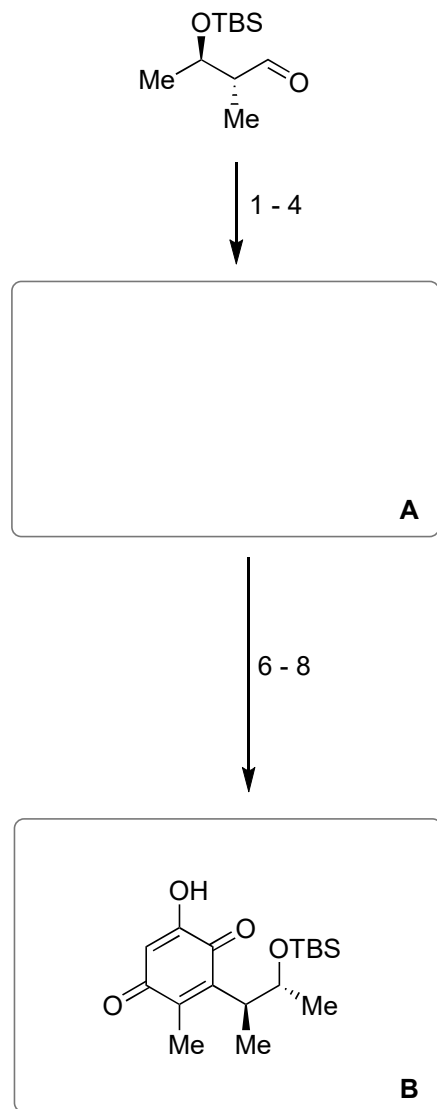
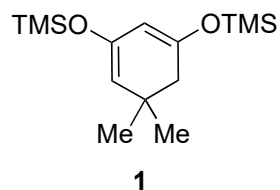


Asymmetric Total synthesis of Asperones A and B through Organocatalyzed Quinone [5 + 2] Cycloaddition

C. Qu, L. Chen, P. Wang, J. Zhang, Y. Ding, X. Long, T. Zhang, Y. Zhao, J. Deng, *J. Am. Chem. Soc.* **2025**, *147*, 6739–6746.



- 1) PPh_3 , CBr_4
- 2) $n\text{BuLi}$, ClCO_2Me
- 3) **1**, 180°C *then* silica gel
- 4) TBSOTf, Et_3N
- 5) DIBAL

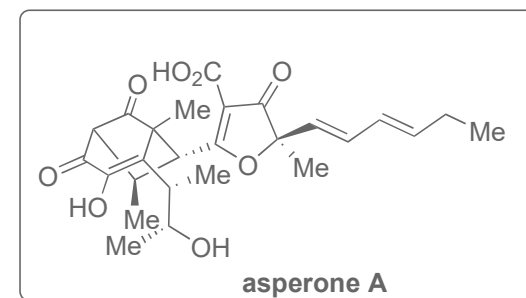


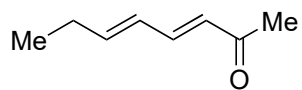
- 6) $\text{BF}_3 \cdot \text{Et}_2\text{O}$, Et_3SiH
- 7) TBAF
- 8) Frémy's salt

1) + 2) Name of the reaction?

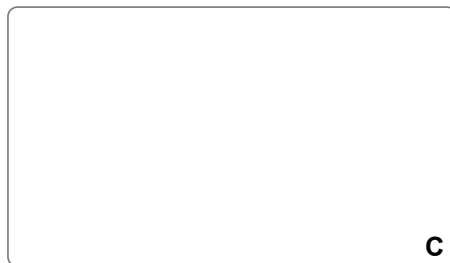
3) *Hint*: 3 reactions occur

7) *Hint*: Deprotection of more labile PGs
8) Structure?

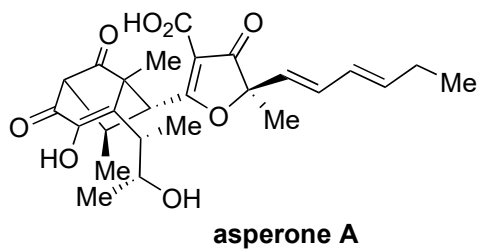




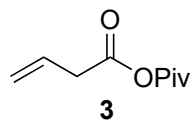
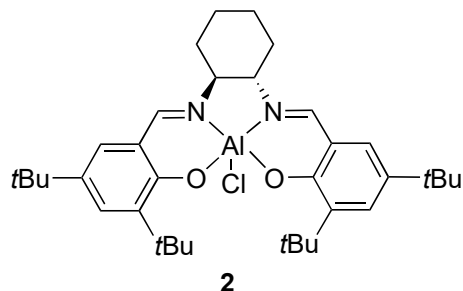
9-12



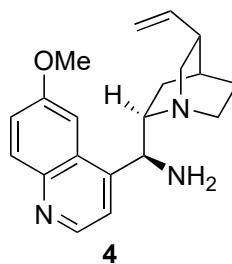
13-14



- 9) TMSCN, **2**, Ph₃PO
 10) DIBAL
 11) SnCl₂, N₂HCCO₂tBu
 12) **3**, NaH *then* TBAF



- 13) **4**, **B**
 14) HF *aq.*



11) Name of the reaction?

12) *Hint*: cyclization occurs

13) Classify the reaction.