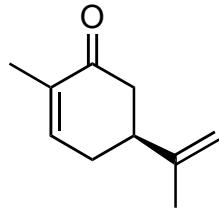


Enantioselective Total Synthesis of (-)-Pavidolide B

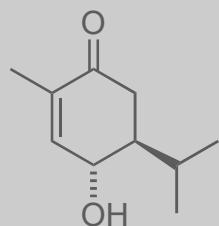
Zhang, P.; Yan, Z.; Li, Y.; Gong, J.; Yang, Z.*

J.Am.Chem.Soc. 2017, 139, 13989–13992

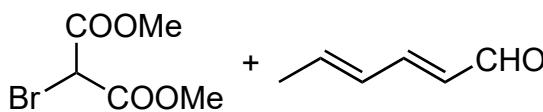


1, 2

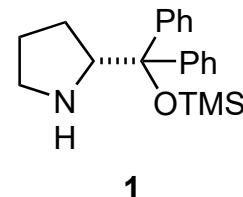
- 1) Cu-Al Ox, air, *t*-BuOK
2) RhCl(PPh₃)₃, H₂



A



3-5



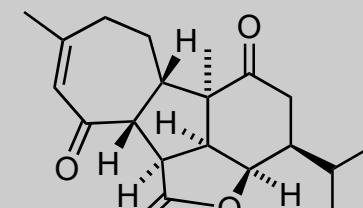
1

- 3) 1, Et₃N
4) CH(OEt)₃, PTSA
5) Me₄NOH

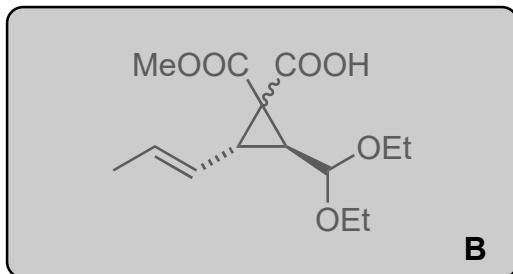
2) Name the catalyst and explain its selectivity.

Wilkinson's catalyst, selectively reduces the least hindered alkene

3) Hint: domino 1,4-Michael/α-alkylation reaction

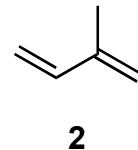
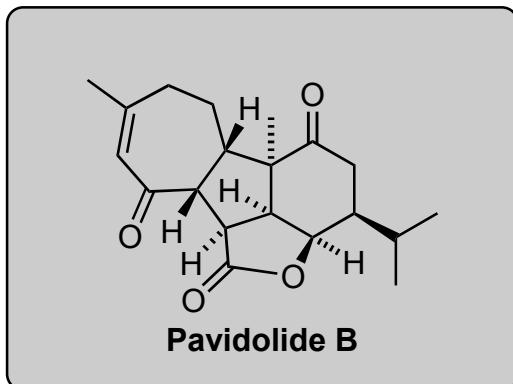


Pavidolide B



A + B

6-12

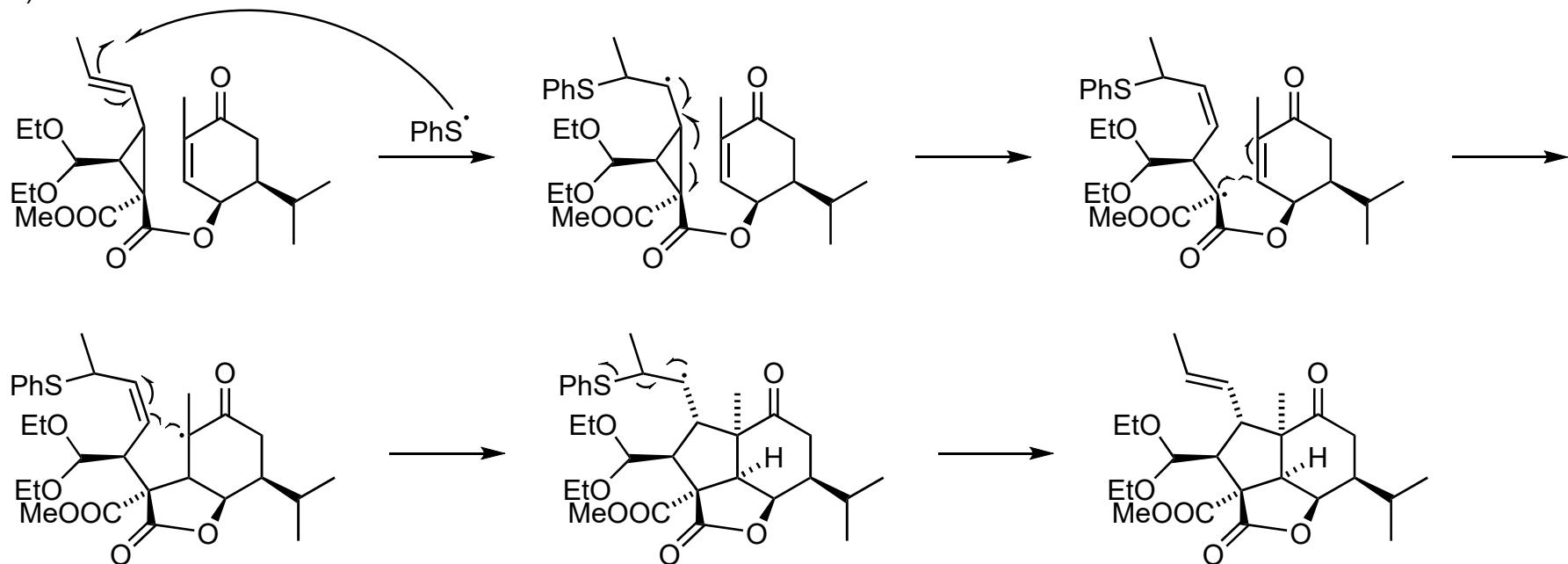


- 6) PPh_3 , DEAD
- 7) PhSH, *p*-toluidine,
 $\text{Ir}(\text{dF}(\text{CF}_3)\text{ppy})_2(\text{dtbbpy})\text{PF}_6$, blue LEDs
- 8) Me_4NOH then 120°C then HCl
- 9) $\text{Ni}(\text{acac})_2$, **2**, Et_2Zn
- 10) NaHCO_3 , DMP
- 11) Grubbs II catalyst
- 12) $\text{RhCl}_3 \cdot 3\text{H}_2\text{O}$, 100°C , sealed tube

7) Draw out mechanism.

9) Name of **2** isoprene
Homoallylation of aldehyde, draw out mechanism.
Kimura, M., et al., *Angew. Chem. Int. Ed.* **1999**, 38, 397-400

7)



9)

