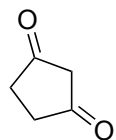


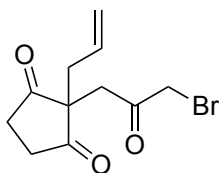
Synthesis and Structure Revision of Dichrocephones A and B

Volker M. Schmiedel, Young J. Hong, Dieter Lentz, Dean J. Tantillo, Mathias Christmann

Angew. Chem. Int. Ed. **2018**, *57*, 2419 – 2422.

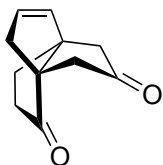


1 – 4



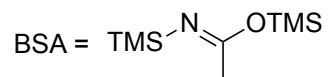
A

5 – 7

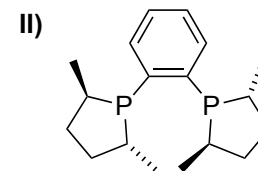
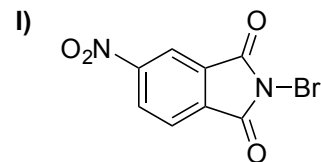


B

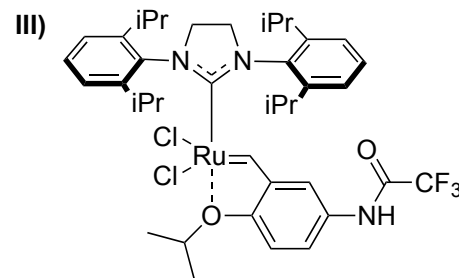
- 1) Pd(C₃H₆)Cl₂, BSA, NaOAc, dppe, allyl acetate
- 2) KOtBu, propargyl bromide
- 3) **I**, AgNO₃ (5 mol%)
- 4) PPh₃AuNTf₂ (4 mol%), H₂O



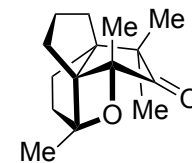
- 5) **II** (10 mol%), PhSiH₃, butylene oxide, 1,4-dioxane, 150 °C
- 6) (2-thiophene)CuCNLiMgBr
- 7) **III** (1 mol%), PhMe, 110 °C



- 5) Please come up with a mechanism
Werner's catalytic, asymmetric Wittig reaction

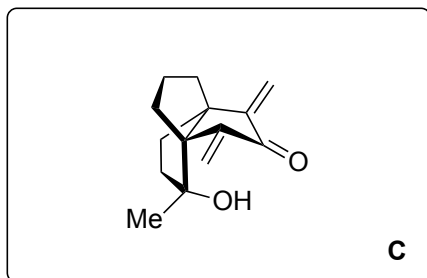


How would you call the carbon skeleton in **B**?
[3.3.3] Propellane

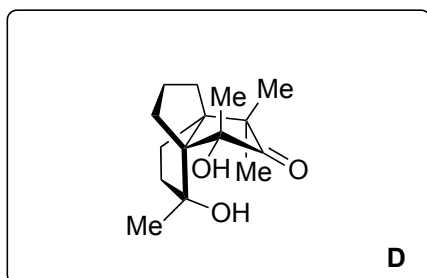


Dichrocephone B

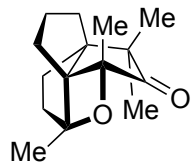
8 – 12



13 – 17



18 – 20



Dichrocephone B

- 8) K-selectride
- 9) MeMgCl
- 10) H₂, Pd/C
- 11) PCC, AcOH
- 12) Ac₂O, (Me₂N)₂CH₂ (30 equiv.)
DMF, 95 °C

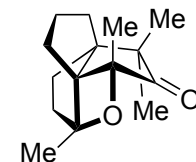
- 13) NaH, Me₃SOI (1 equiv.)
- 14) TFAA, H₂O₂, Na₂HPO₄
- 15) LiAlH₄ (10 equiv.)
- 16) PtO₂, NaOAc, H₂, AcOH
- 17) py·SO₃, NEt₃, DMSO

- 18) HCO₂H
- 19) PhSiH₃, O₂,
Co(acac)₂ (30 mol%)
- 20) BF₃·OEt₂

13) Please name the reaction
Corey-Chaykovsky cyclopropanation

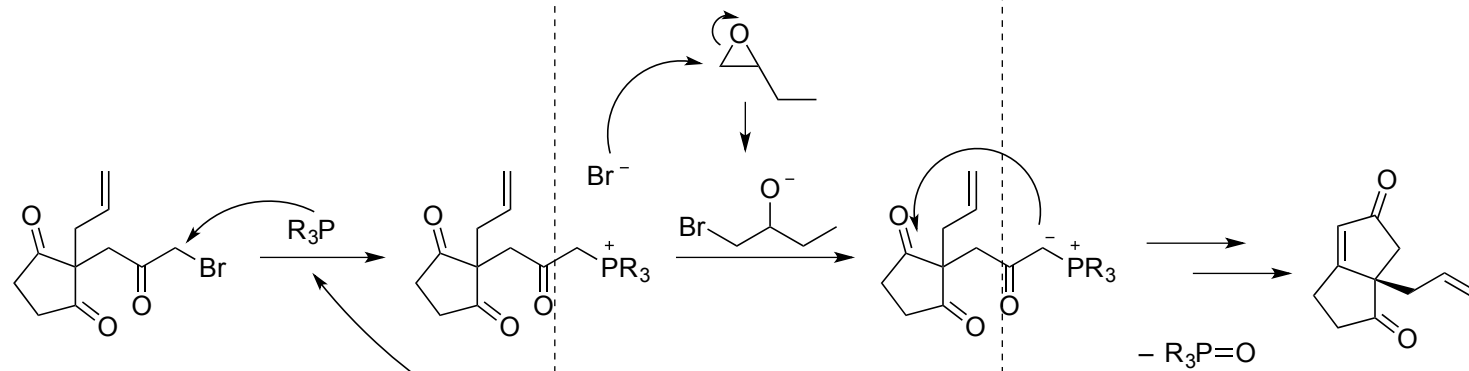
17) Please name the reaction
Parikh-Doering oxidation

19) Please name the reaction
Mukaiyama hydration



Dichrocephone B

5)



Eur. J. Org. Chem. **2014**, 6630.
Eur. J. Org. Chem. **2014**, 6873.

+ $PhSiH_3$
 - $PhSiH_2OH$