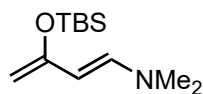


Total Synthesis of (-)-Mitrephorone A

Matthieu J. R. Richter, Michael Schneider, Marco Brandstatter, Simon Krautwald,
and Erick M. Carreira

J. Am. Chem. Soc. 2018, 140, 16704-16710.



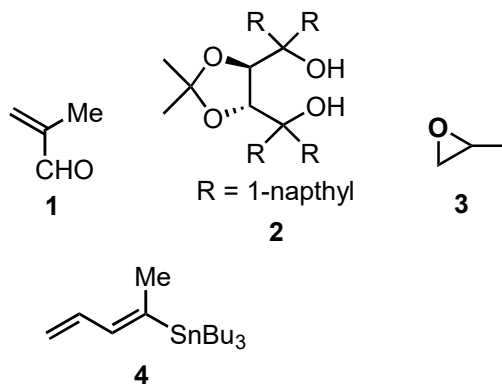
1-5



6-10

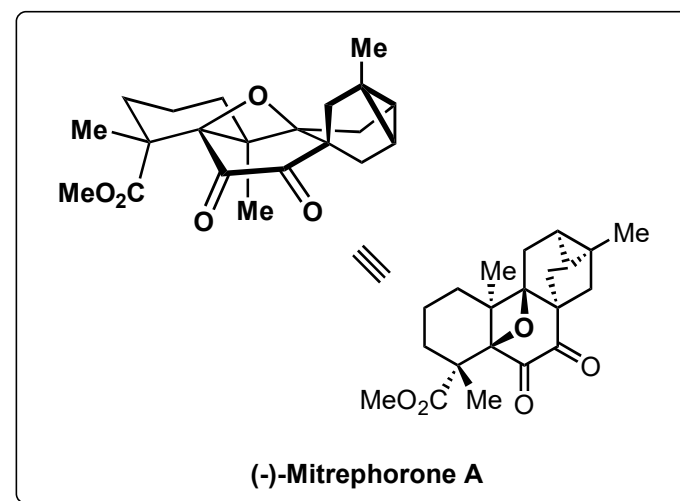


- 1) **1**, (S,S)-1-Np-TADDOL **2** (20 mmol%), -80 °C, PhMe, then Ph₃P=CH₂, PhMe, then aq HCl (1M)
- 2) LDA, THF, -78 °C, then HMPA, MeO₂CCN
- 3) LiHMDS, t-BuMe₂SiOTf, THF, -78 °C
- 4) propylene oxide **3**, PhMe, 190 °C
- 5) DIBAL-H, -78 °C, then 1 M aq HCl, -78 °C to RT

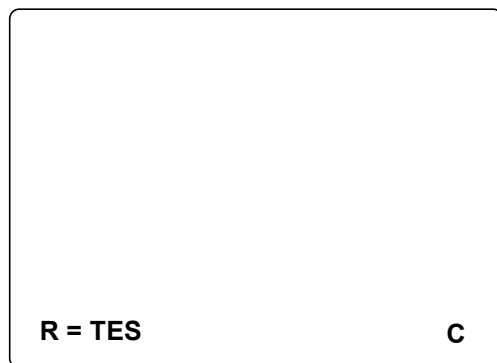


- 6) MsCl, Et₃N, CH₂Cl₂, 0 °C
- 7) KCN, DMSO, 80 °C
- 8) (E)-tributyl(penta-2,4-dien-2-yl)stannane **4**, n-BuLi, THF, -78 °C, LaCl₃·2LiCl, THF, -78 °C
- 9) Et₃SiCl, imidazole, DMF, 80 °C
- 10) DIBAL-H, PhMe, -78 to 0 °C

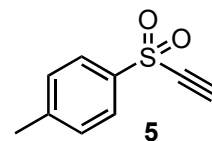
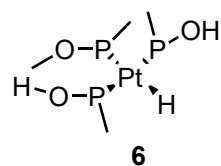
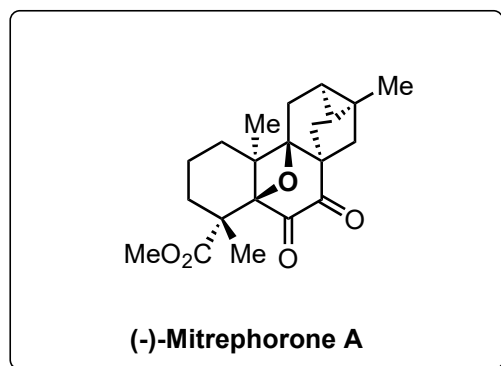
What is the name of the SM and how would you synthesize it?



11-18



19



- 11) ethynyl p-tolyl sulfone **5**, LDA, THF, -78 °C, then **B**
- 12) DMP, t-BuOH, RT
- 13) Me₂CuLi, Et₂O, 0 °C
- 14) PtO₂ (10 mol %), H₂ (1 atm), EtOH, RT
- 15) Et₂AlCN, PhMe, 0 °C
- 16) Ghaffar-Parkins catalyst **6** (50 mol %), EtOH-H₂O (4:1), 80 °C, then KOH, 170 °C
- 17) TMSCHN₂, PhH-MeOH (4:1), 0 °C to RT
- 18) SeO₂, 1,4-dioxane, 100 °C

- 19) TASF, H₂O, DMF, 0 °C, then PhI(OH)OTs

Step 14: Name of catalyst

Step 18: Name of reaction

Step 19: Mechanism of this step

