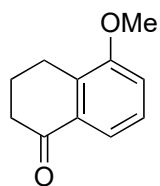


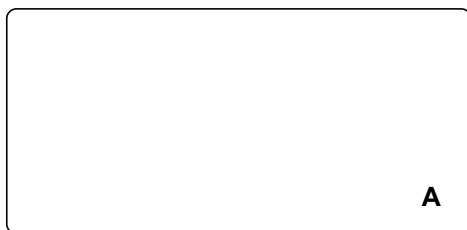
13-Step Total Synthesis of Atropurpuran

S. Xie, G. Chen, H. Yan, J. Hou, Y. He, T. Zhao, J. Xu

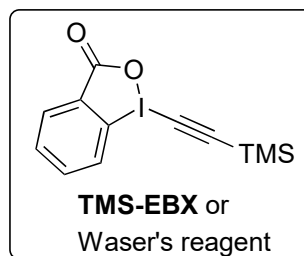
J. Am. Chem. Soc. **2019**, *141*, 3435-3439.



1 - 3

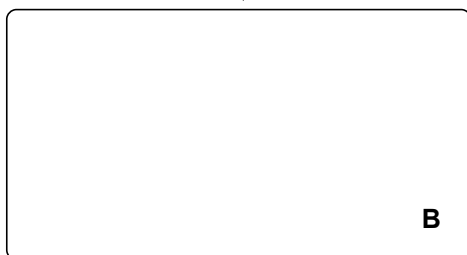


- 1) LHMDS, 4-pentenylchlorid
- 2) TBAF, **TMS-EBX**
- 3) Grubbs II,
then BBr_3
then AlCl_3 , LiAlH_4



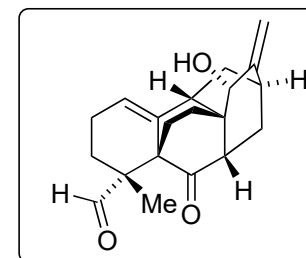
How would you make TMS-EBX and come up with a reaction mechanism for step 2

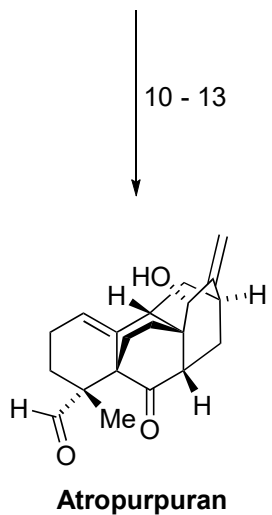
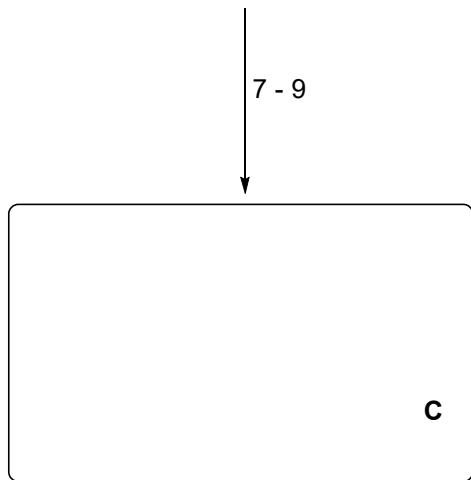
4 - 6



- 4) PIDA, MeOH
then BHT, mesitylen 160 °C
- 5) Crabtree's catalyst
then TPAP, NMO
- 6) KHMDS, PhNTf_2

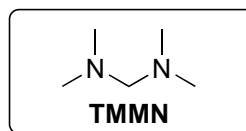
Structure and role of BHT?





- 7) Pd(PPh₃)₄, CO, *n*Bu₃SnH
then DIBAL
- 8) TFAA, DMSO, NEt₃ [Note: work up with LiOH]
- 9) Crabtree's catalyst
then DMP

- 10) *t*BuOK, *t*BuOH, MeI [Note d.r. = 3:1]
- 11) Sml₂, MeOH
- 12) **TMMN**, Ac₂O
- 13) NaBH(OMe)₃



Name the reaction in step 8) explain why these conditions are used. show shortly the mechanism with sidereactions