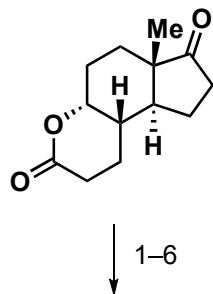
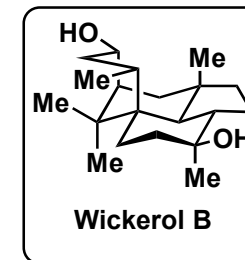
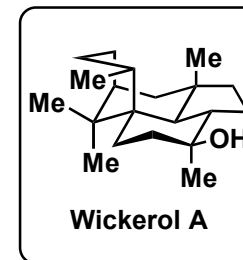


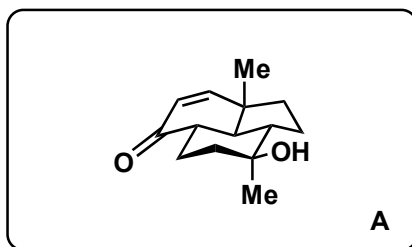
Divergent Synthesis of Antiviral Diterpenes Wickerols A and B

Jiachen Deng, Yuhan Ning, Hailong Tian, and Jinghan Gui

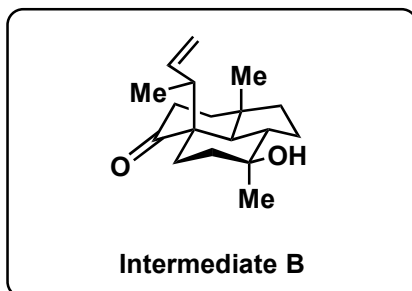
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1-6



7-9



- 1) TMSOTf, NEt₃, DCM *then* Pd(OAc)₂, O₂
- 2) NaBH₄, TFA, DCM
- 3) MeLi (3 equiv.), THF *then* Ac₂O, DMF, DIPEA, DMAP
- 4) Sml₂, HMPA/THF
- 5) Pd/C, H₂, MeOH *then* K₂CO₃
- 6) IBX, PTSA, DMSO

Step 1: What is the name of the reaction?

Hint for Step 2: Variant of Luche reduction

Step 6: Provide a mechanism for this reaction

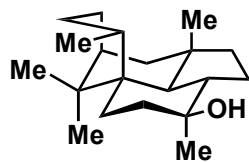
- 7) (*E*)-crotyl bromide, KO^tBu, DME
- 8) DIPEA, ethylene glycol, 165 °C
- 9) Li, NH₃, THF

Step 8: Classify the reaction and provide a rationale for the stereochemical outcome

Intermediate B



10–16

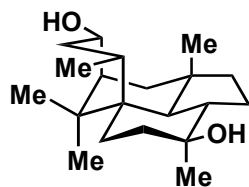


- 10) RhCl(PPh)₃, HBCat, O₂, THF *then* NaOH, H₂O₂
- 11) PPh₃, NIS, imidazole, DCM
- 12) TMSI, HMDS, DCM
- 13) AgTFA, 2,6-lutidine, THF *then* PTSA
- 14) Zn, ZrCl₄, PbCl₂, CH₂I₂, THF
- 15) Et₂Zn, TFA, CH₂I₂, DCM
- 16) PtO₂, H₂, AcOH

Intermediate B



10'–15'



- 10') RhCl(PPh)₃, HBCat, O₂, THF *then* NaOH, H₂O₂
- 11') DMP, DCM
- 12') 6N HCl, THF
- 13') Zn, ZrCl₄, PbCl₂, CH₂I₂, THF
- 14') Et₂Zn, TFA, CH₂I₂, DCM
- 15') PtO₂, H₂, AcOH