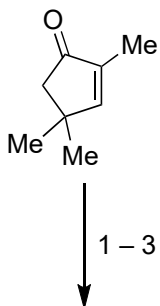


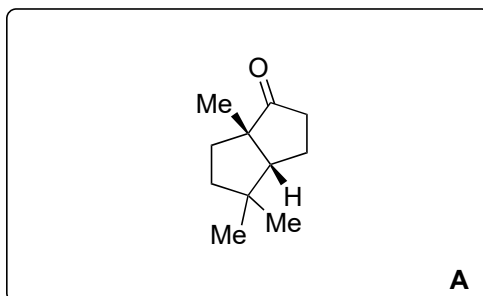
Total Syntheses of (–)-Conidiogenone B, (–)-Conidiogenone, and (–)-Conidiogenol

Bo Xu, Wen Xun, Shaobin Su, Hongbin Zhai

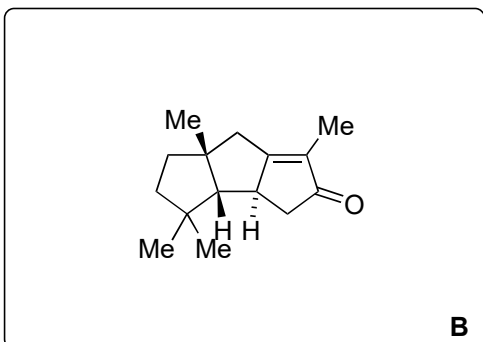
Angew. Chem. Int. Ed. **2020**, *59*, 1 – 6.



1 – 3



5 – 9

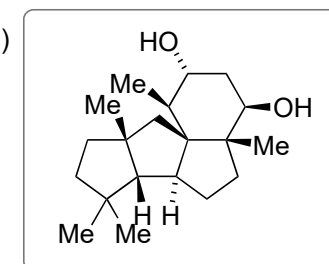


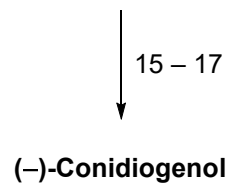
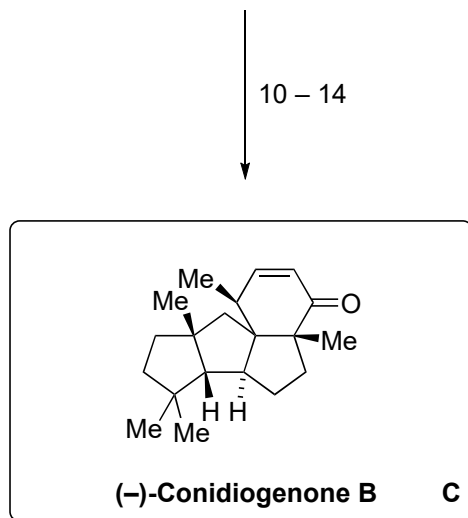
- 1) (*R*)-CBS, Catecholborane
- 2) Hg(OAc)₂, NEt₃, *n*-butyl vinyl ether, 170 °C
- 3) TosMIC, KO^{*t*}-Bu
- 4) PhSiH₃, Fe(acac)₃, air

- 1) How would you prepare the CBS catalyst?
Draw the transition state.
(*S*)-enantiomer obtained
- 2) Name of the reaction?
Claisen rearrangement
- 3) Name of the reaction? Mechanism?
van-Leusen reaction

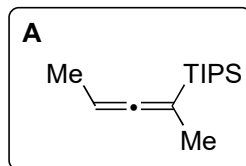
- 5) TMSOTf, NEt₃
then MeReO₃, H₂O₂, py
- 6) 1-propynylmagnesium bromide
- 7) Pb(OAc)₄ then CeCl₃, NaBH₄
- 8) PBu₃, *o*-NO₂-C₄H₄SeCN
then H₂O₂
- 9) Co₂(CO)₈, TFA, BH₃·SMe₂
then NMO

- 5) Name of the reaction? What is the active species?
Provide alternative conditions for this transformation.
Re catalyzed Rubottom oxidation
alternatives: Davis oxaziridine, MoOPH, LHMDs / O₂, ...
- 8) Name of the reaction? Mechanism?
Grieco elimination
- 9) Name of the reactions?
(hint: tandem sequence of 2 reactions)
Nicholas - Pauson-Khand reaction





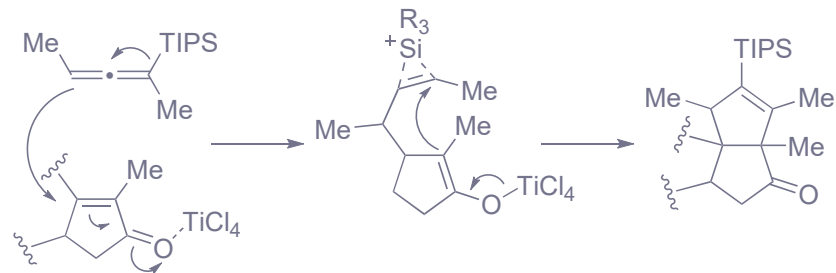
- 10) **A**, TiCl_4 then $\text{BF}_3 \cdot (\text{HOAc})_2$
- 11) NaBH_4 , MeOH
- 12) NaH, CS_2 , MeI
- 13) *n*- Bu_3SnH , AIBN
- 14) O_3 , DMS then HCl



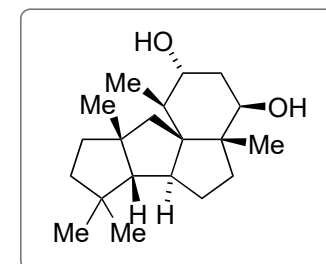
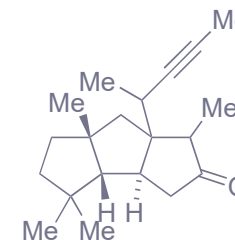
- 15) Triton B, TBHP
- 16) SmI_2
- 17) L-selectride

- 10) Name of the reaction? Mechanism?
What side reaction could you expect under these conditions?

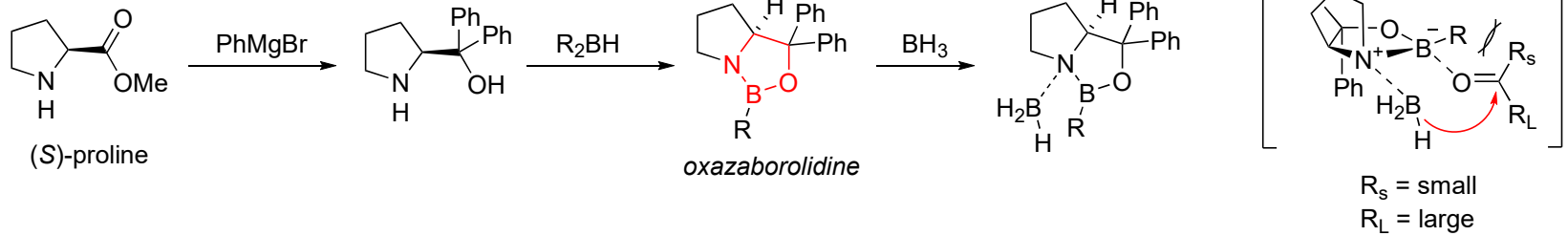
Danheiser annulation



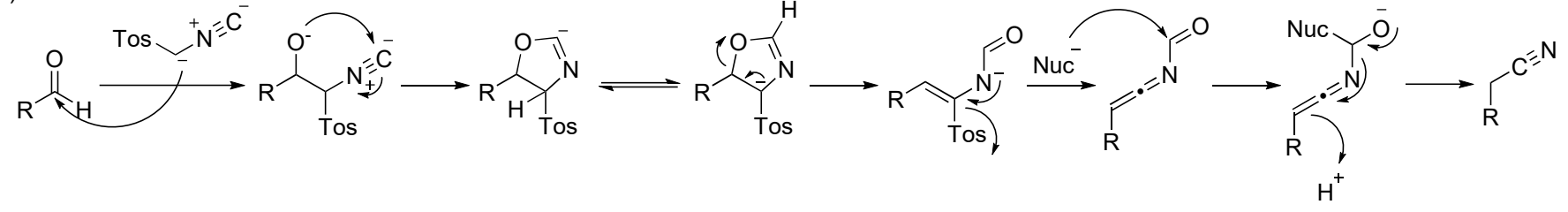
side reaction: Sakurai reaction; product:



1)



3)



5) *J. Org. Chem.* **1998**, *63*, 4129-4130.

