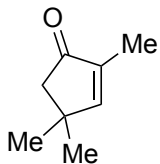
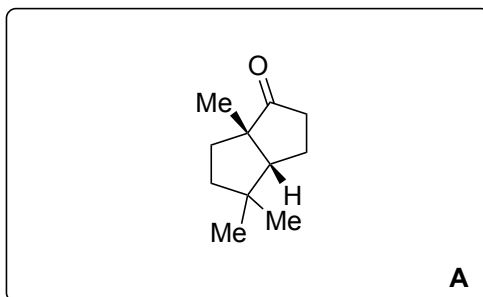


# Total Syntheses of (–)-Conidiogenone B, (–)-Conidiogenone, and (–)-Conidiogenol

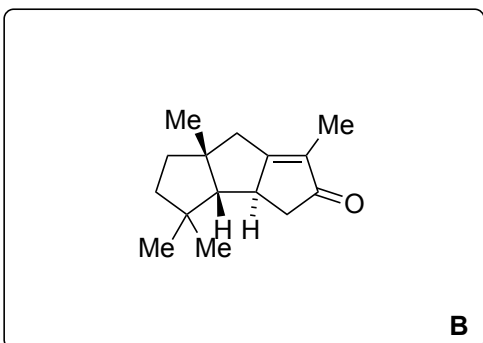
Xu, B.; Xun, W.; Su, S.; Zhai, H.  
*Angew. Chem. Int. Ed.* **2020**, *59*, early view.



1–3



5–9



- 1) (*R*)-CBS, Catecholborane
- 2) Hg(OAc)<sub>2</sub>, NEt<sub>3</sub>, *n*-butyl vinyl ether, 170 °C
- 3) TosMIC, KO<sup>t</sup>-Bu
- 4) PhSiH<sub>3</sub>, Fe(acac)<sub>3</sub>, air

- 1) How would you prepare the CBS catalyst?  
 Draw the transition state. *see below*  
 (S)-enantiomer obtained

- 2) Name of the reaction?  
 Claisen rearrangement

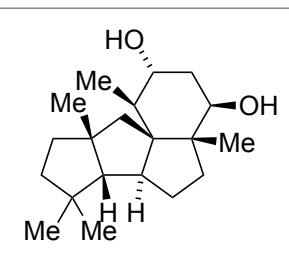
- 3) Name of the reaction? Mechanism?  
 van-Leusen reaction

- 5) TMSOTf, NEt<sub>3</sub>  
 then MeReO<sub>3</sub>, H<sub>2</sub>O<sub>2</sub>, py
- 6) 1-propynylmagnesium bromide
- 7) Pb(OAc)<sub>4</sub> then CeCl<sub>3</sub>, NaBH<sub>4</sub>
- 8) PBU<sub>3</sub>, *o*-NO<sub>2</sub>-C<sub>6</sub>H<sub>4</sub>SeCN  
 then H<sub>2</sub>O<sub>2</sub>
- 9) Co<sub>2</sub>(CO)<sub>8</sub>, TFA, BH<sub>3</sub>·SMe<sub>2</sub>  
 then NMO

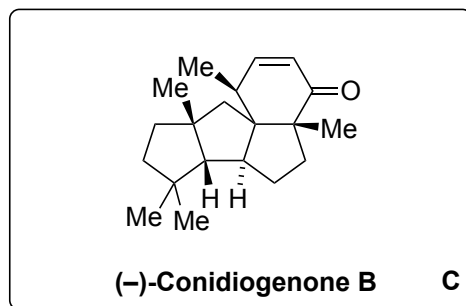
- 5) Name of the reaction? What is the active species?  
 Provide alternative conditions for this transformation.  
*Re* catalyzed Rubottom oxidation  
 alternatives: Davis oxaziridine, MoOPH, LHMDS / O<sub>2</sub>, ...

- 8) Name of the reaction? Mechanism?  
 Grieco elimination

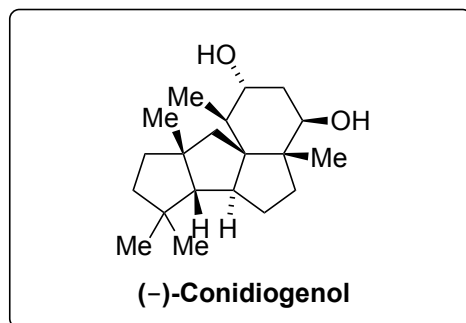
- 9) Name of the reactions?  
 (hint: tandem sequence of 2 reactions)  
 Nicholas - Pauson-Khand reaction



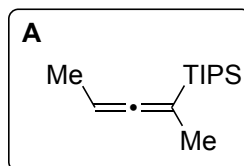
10–14



15–17



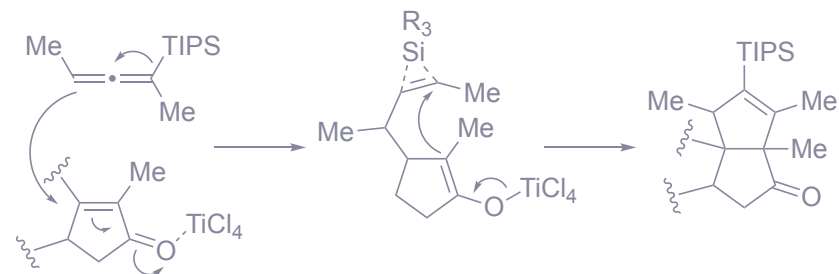
- 10) **A**,  $\text{TiCl}_4$  then  $\text{BF}_3 \cdot (\text{HOAc})_2$
- 11)  $\text{NaBH}_4$ , MeOH
- 12) NaH,  $\text{CS}_2$ , MeI
- 13)  $n\text{-Bu}_3\text{SnH}$ , AIBN
- 14)  $\text{O}_3$ , DMS then HCl



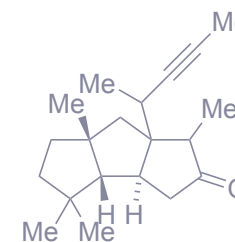
- 15) Triton B, TBHP
- 16)  $\text{SmI}_2$
- 17) L-selectride

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

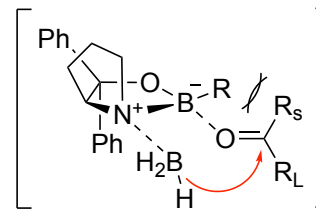
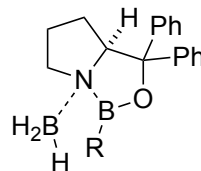
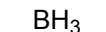
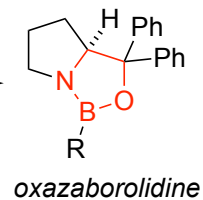
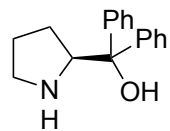
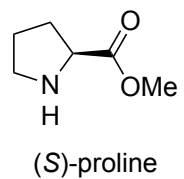
Danheiser annulation



side reaction: Sakurai reaction; product:

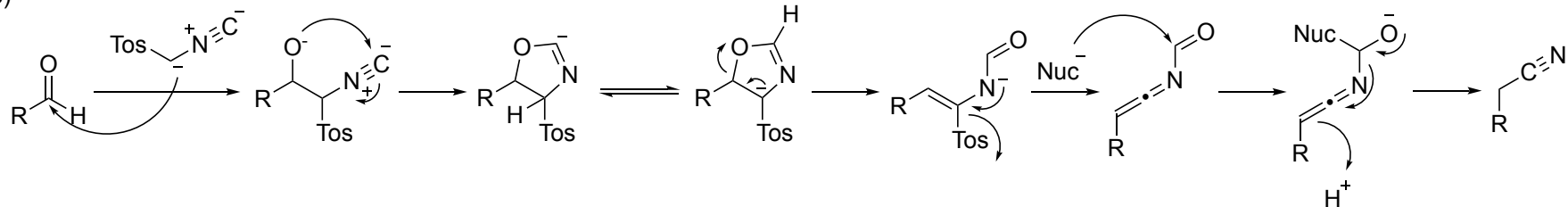


1)



$R_s = \text{small}$   
 $R_L = \text{large}$

3)

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