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

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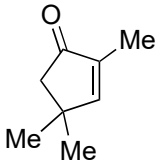


1 – 3

A

5 – 9

B

1) (*R*)-CBS, Catecholborane
2) $Hg(OAc)_2$, NEt_3, *n*-butyl vinyl ether, 170 °C
3) TosMIC, KO*t*-Bu
4) $PhSiH_3$, $Fe(acac)_3$, air

5) TMSOTf, NEt_3
then $MeReO_3$, H_2O_2, py
6) 1-propynylmagnesium bromide
7) $Pb(OAc)_4$ *then* $CeCl_3$, $NaBH_4$
8) PBu_3, *o*-NO_2-C_4H_4SeCN
then H_2O_2
9) $Co_2(CO)_8$, TFA, $BH_3{\cdot}SMe_2$
then NMO

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

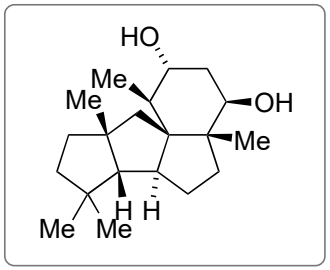
2) Name of the reaction?

3) Name of the reaction? Mechanism?

5) Name of the reaction? What is the active species? Provide alternative conditions for this transformation.

8) Name of the reaction? Mechanism?

9) Name of the reactions? (hint: tandem sequence of 2 reactions)



10 – 14

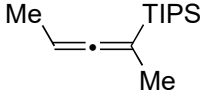
(–)-Conidiogenone B **C**

15 – 17

(–)-Conidiogenol

10) **X**, $TiCl_4$ *then* $BF_3 \cdot (HOAc)_2$
11) $NaBH_4$, MeOH
12) NaH, CS_2, MeI
13) *n*-Bu_3SnH, AIBN
14) O_3, DMS *then* HCl

X



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?