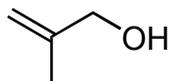


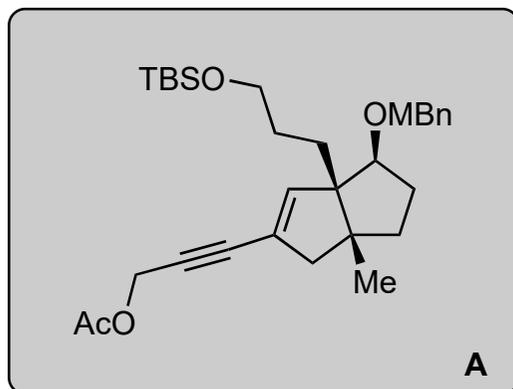
Total Synthesis of (-)-Bipolarolide D

Chesnokov, G. A.; Friedli, J.; Carta, F. J.; Gademann, K.

J. Am. Chem. Soc. Au **2024**, *4*, 4194-4198.

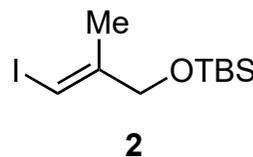
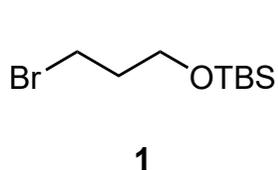


1-6



7-10

- 1) $\text{CH}_3\text{C}(\text{OEt})_3$, propionic acid (cat.), Δ
then *i*-PrMgCl, $\text{CH}_3\text{NH}(\text{OMe})\text{HCl}$
- 2) TMS-acetylene, *n*-BuLi
then (*S,S*)-Noyori cat., KOH, *i*-PrOH
- 3) K_2CO_3 , MeOH
then NaH, TBAI, MBnCl
- 4) $\text{Co}(\text{CO})_8$
- 5) **1**, *t*-BuLi, CuI then Comin's reagent
- 6) propargyl alcohol, $\text{Pd}(\text{PPh}_3)_2\text{Cl}_2$, CuI
then Ac_2O , NEt_3



- 7) $\text{Au}(\text{PPh}_3)\text{Cl}$, AgNTf_2
then AcCl, MeOH, K_2CO_3
- 8) SO_3Py , NEt_3 , DMSO/ CH_2Cl_2
then Ohira-Bestmann reagent, K_2CO_3
- 9) HSnBu_3 , AIBN, Δ then CSA
- 10) LiHMDS, TMSCl
then O_2 , $\text{Pd}(\text{OAc})_2$

- 1) Name of the reaction?

Johnson-Claisen rearrangement

- 2) *hint: newest stereocenter is (S)-configured*

- 4) Name of the reaction?

Pauson-Khand

- 7) Name of the reaction?

Rautenstrauch Rearrangement

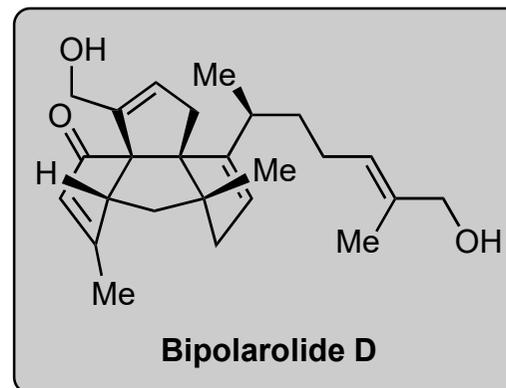
hint: higher substituted olefin formed

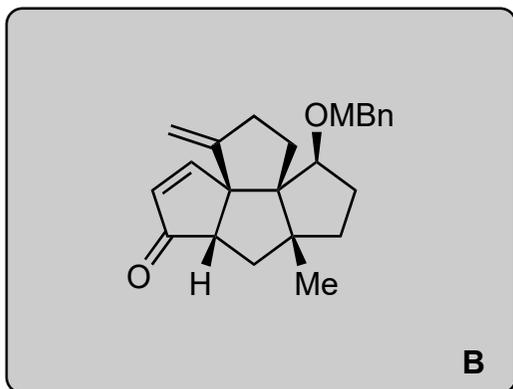
- 8) Name of the reactions?

Parick-Doering, Seyferth Gilbert

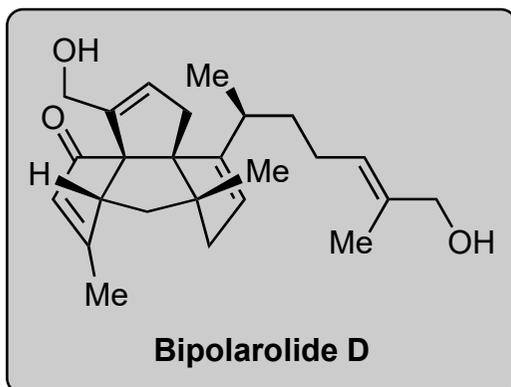
- 10) Name of the reaction?

Saegusa-Ito oxidation





11-18



- 11) *m*-CPBA then MeLi
- 12) LiTMP, Et₂AlCl
- 13) Imidazole, TBSCl (1.05 eq.)
then Na, NH₃ (l.)
- 14) PCC, NaOAc
- 15) crotyl Grignard
- 16) **2**, 9-BBN then NaOH, Pd(PPh₃)₄
- 17) SOCl₂, 2,6-lutidine
- 18) TBAF

11) why epoxide not opened?

14) Name of the reaction?
Babler-Dauben oxidation

15) *hint: compare with NP*

