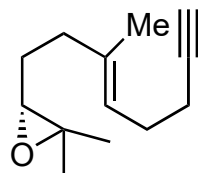


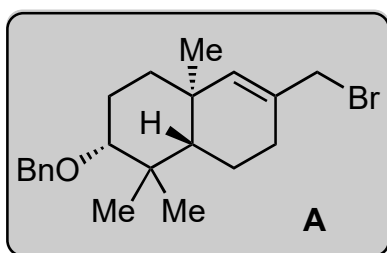
Divergent Total Synthesis of Euphoranginol C, Euphoranginone D, *ent*-Trachyloban-3 β -ol, and *ent*-Trachyloban-3-one.

Xu, Z.-J.; Zong, Y.; Qiao, Y.-N.; Zhang, J.-Z.; Liu, X.; Zhu, M.-Z.; Xu, Y.; Zheng, H.; Fang, L.; Wang, X.-N.; Lou, H.-X.

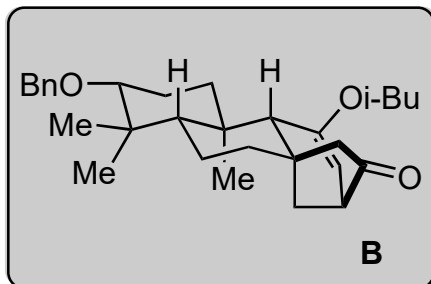
Angew. Chem. Int. Ed. 2020, 59, 19919–19923.



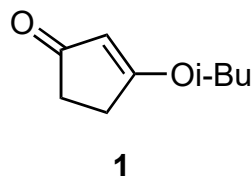
1-4



5,6



- 1) $\text{BF}_3 \cdot \text{Et}_2\text{O}$, CH_2Br_2
- 2) NaH , BnBr
- 3) $t\text{-BuLi}$, DMF then NaBH_4
- 4) PBr_3 , Et_2O



- 5) **1**, LDA , HMPA
- 6) $h\nu$ (254nm), then $\text{BF}_3 \cdot 2\text{AcOH}$

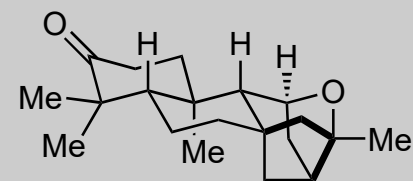
1) What is the starting material made from? 4 steps from geraniol

5) Hint: 1:1 dr of diastereomers. Draw both

6) What is the name of the reaction?

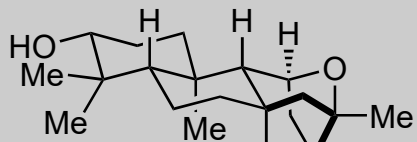
De Mayo

6) Hint: 2 regiochemical possibilities per diastereomer- draw all and map to NP



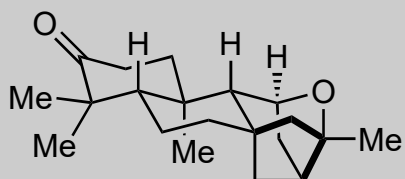
Euphoranginone D

7-10



Euphoranginol C

11



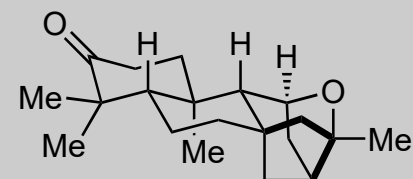
Euphoranginone D

But wait, there's more!

- 7) 3N HCl (aq)
- 8) $\text{CH}_3\text{PPh}_3\text{Br}$, KHMDS
- 9) Na, i-BuOH, 50°C then PTSA
- 10) H_2 , Pd/C, MeOH

11) DMP

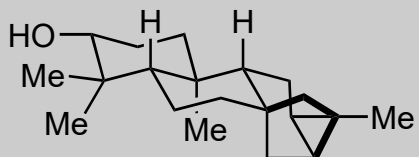
7,8) *Hint: Regioselective methenylation*



Euphoranginone D

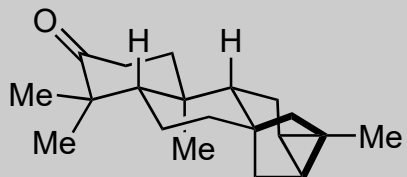
B

12-15



ent-Trachyloban-3 β -ol

16

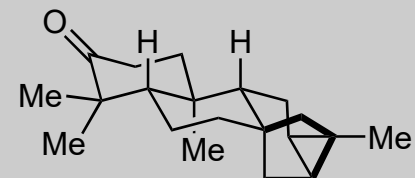


ent-Trachyloban-3-one

- 12) $\text{CH}_3\text{PPh}_3\text{Br}$, KHMDS
13) 1N HCl (.6 eq), acetone (.02M)
14) NH_2NH_2 , KOH
15) H_2 , Pd/C, MeOH

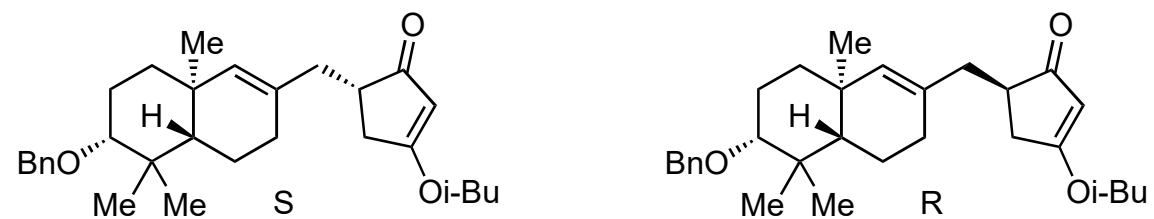
16) DMP

12,13) *Hint: Regioselective methenylation*

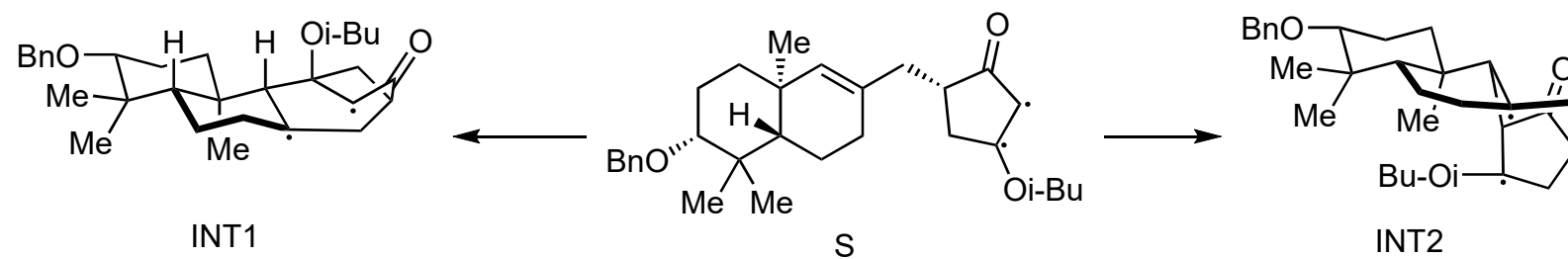


ent-Trachyloban-3-one

5) Diastereomers



6) Reactive Intermediates:



kinetically and thermodynamically favored
leads to 14