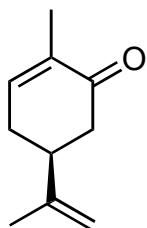
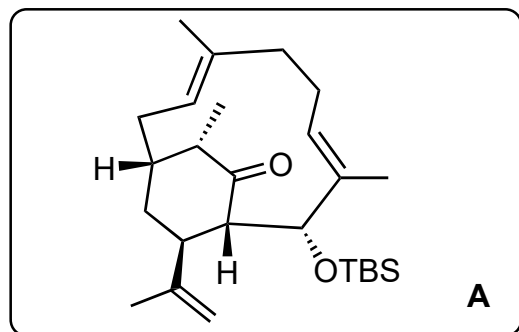


Enantioselective Total Synthesis of the Diterpene (+)-Cubitene

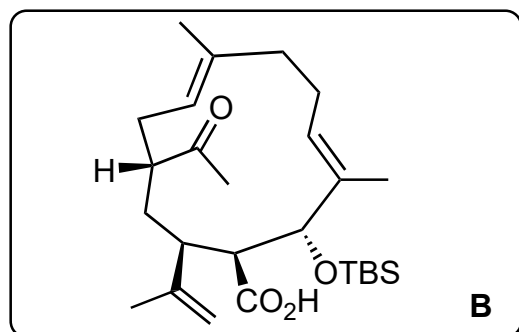
Simon, K.; Wefer, J.; Schöttner, E.; Lindel, T.
Angew. Chem. Int. Ed. **2012**, 51, 10889-10892.



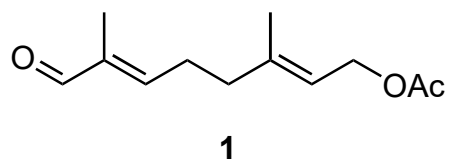
1-5



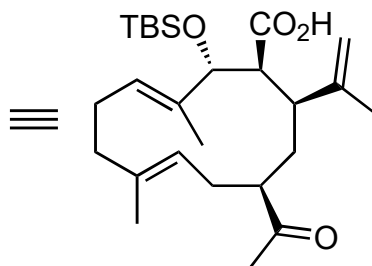
6-9



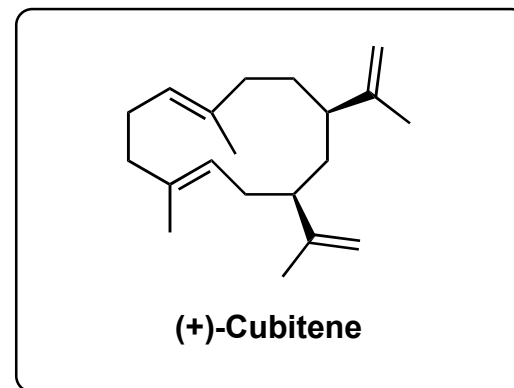
- 1) LDA, *then* **1**
- 2) TBSCl, imidazole
- 3) LiOH
- 4) ClPO(OEt)₂
- 5) SmI₂



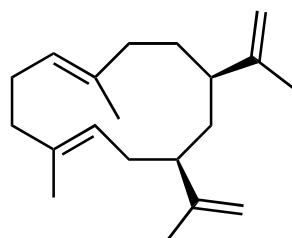
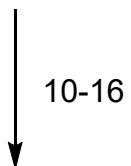
- 6) LiHMDS, *then* O₂, P(OEt)₃
- 7) LiAlH₄
- 8) H₅IO₆
- 9) NaClO₂, NaH₂PO₄, 2-methyl-2-butene



5) 12-membered ring is formed



B



(+)-Cubitene

- 10) $\text{H}_2\text{C}=\text{PPh}_3$
- 11) TsOH , MeOH
- 12) DMSO , PyrSO_3 , Et_3N
- 13) Δ , $-\text{CO}_2$
- 14) LiAlH_4
- 15) TBSOTf , DIPEA
- 16) Li , EtNH_2

- 11) TBS deprotection
- 16) deoxygenation