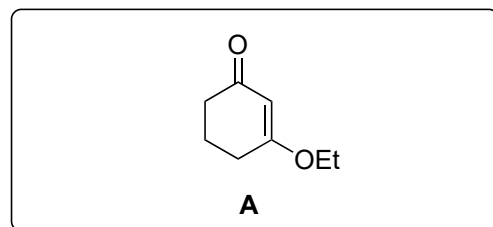
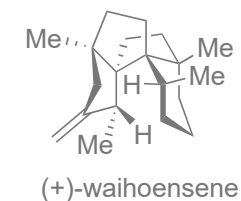


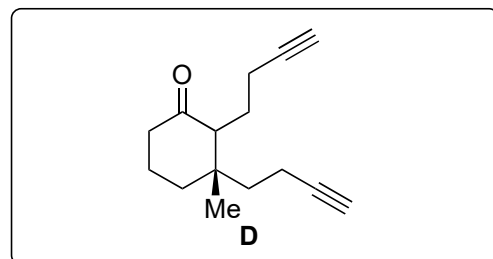
# Synthesis of Waihoensene

Yongzheng Qu, Zheyuan Wang, Zhongchao Zhang, Wendou Zhang, Jun Huang and Zhen Yang

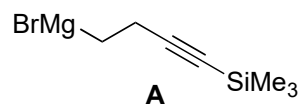
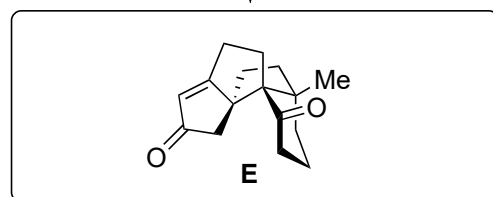
*J. Am. Chem. Soc.* **2020**, *142*, 6511



1–6

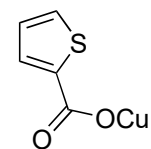


7–8



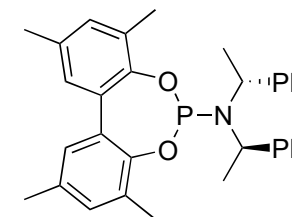
- 1) **A**
- 2) **B, C**,  $\text{AlMe}_3$ , then **D**
- 3) *m*CPBA
- 4) allyl-SiMe<sub>3</sub>,  $\text{BF}_3 \cdot \text{OEt}_2$
- 5)  $\text{O}_3$ , then  $\text{PPh}_3$
- 6) Ohira Bestmann reagent

- 7) *t*-BuOK
- 8)  $\text{Co}_2(\text{CO})_8$ ,  $\text{N}_2\text{O}$



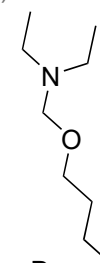
**B**

- 2) name the functional group in **C**: phosphoramidite
- 3) name of reaction? which related reaction? Cope/Hofmann elimination
- 4) name of reaction? Hosomi-Sakurai reaction



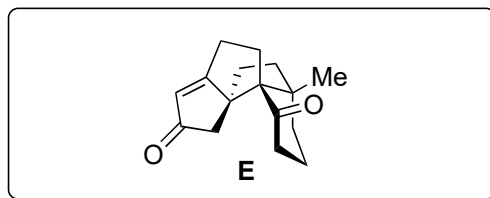
**C**

- 6) name of reaction? Seyferth Gilbert homologisation

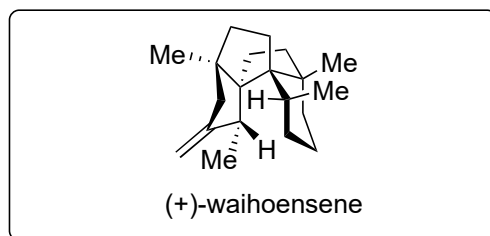


**D**

- 7) classify the ring closure according to Baldwin: 5-exo-dig
- 8) name of reaction? Pauson-Khand reaction



9–15



- 9)  $\text{ZnMe}_2$ , LiBr,  $\text{Ni}(\text{acac})_2$
- 10) 2-ethyl-2-methyl-1,3-dioxolane, *p*-TsOH
- 11)  $\text{Ph}_3\text{PMeBr}$ , *t*-BuOK
- 12) HCl
- 13)  $\text{Fe}(\text{acac})_3$ ,  $\text{PhSiH}_3$ , EtOH
- 14) LiHMDS, MeI
- 15)  $\text{Ph}_3\text{PMeBr}$ , *t*-BuOK

13) explain stereochemical outcome mechanistically

