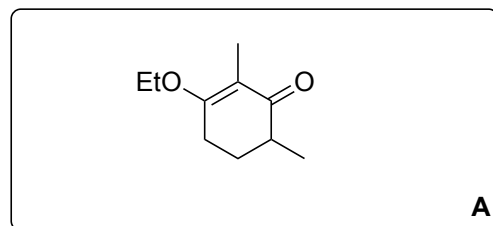


Total Synthesis of the Diterpene Waihoensene

Lisa-Catherine Rosenbaum, Maximilian Häfner, and Tanja Gaich

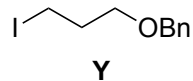
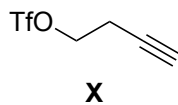
Angew. Chem. Int. Ed. 2021, 60, 2939



1-3



4-10



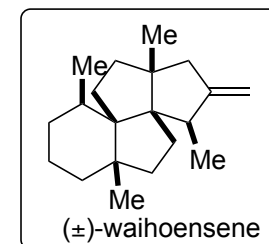
- 1) LiTMP, DMPU, then **X**
- 2) *t*-BuLi, **Y**, then **substrate**
then 2M HCl
- 3) HSnBu₃, AIBN, 80 °C, PhH

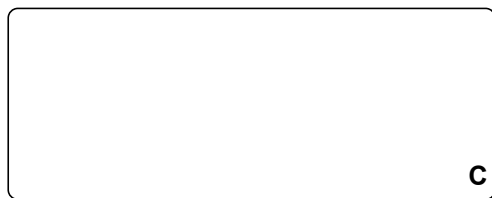
Hint: A new ring is formed during step 3.

- 4) PPTS
- 5) NaOH, MeOH
- 6) NH₂NHTs
- 7) catechol borane, then
NaOAc•3H₂O, reflux
- 8) Na, NH₃(l)
- 9) SO₃•pyr, Et₃N, DMSO
- 10) Ohira-Bestmann reagent,
K₂CO₃, MeOH

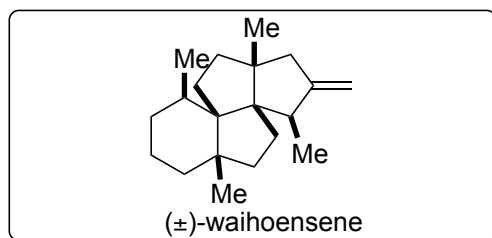
Hint: Step 5 is a base catalyzed epimerization to enrich the desired diastereomer.

- 9) What is the name of this transformation?
- 10) Please provide the structure of the reagent.





11-14



- 11) $\text{Co}_2(\text{CO})_8$, xylene, reflux
- 12) LiTMP, DMPU *then* MeI
- 13) MeLi, CuCN, $\text{BF}_3 \cdot \text{OEt}_2$
- 14) $\text{Ph}_3\text{PCH}_2\text{Br}$, KO t -Bu, 110 °C

11) What is the name of this reaction?