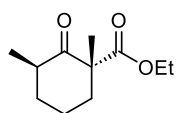
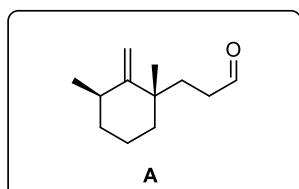


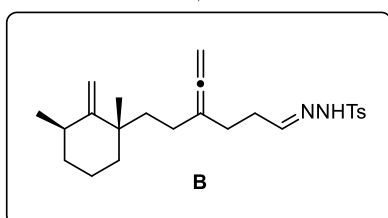
Total Synthesis of (±)-Waihoensene
 H. Lee, T. Kang, H.-Y. Lee, *Angew. Chem. Int. Ed.* **2017**, *56*, 8254.



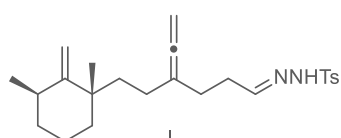
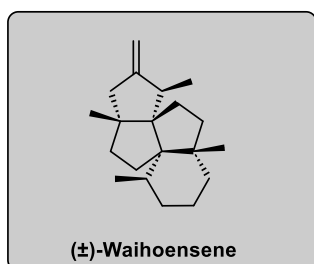
1-6



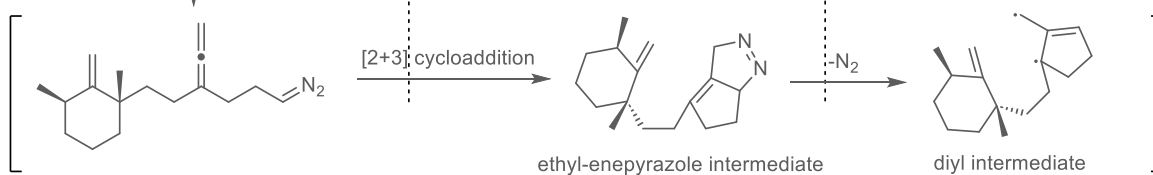
7-13



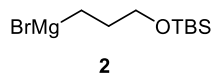
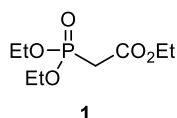
14-21



base + heat



1. Zn, TiCl₄, CH₂I₂, THF, DCM
2. LAH, Et₂O
3. (COCl)₂, DMSO, TEA, DCM
4. **1**, NaH, THF
5. Mg, MeOH
6. 1 eq. DIBAL, DCM



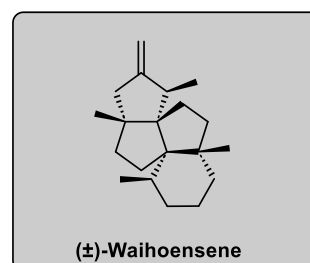
7. CBr₄, PPh₃, DCM
8. n-BuLi, (CH₂O)_n, THF
9. TsCl, KOH, Et₂O
10. **2**, CuCN, THF
11. TBAF, THF
12. (COCl)₂, DMSO, TEA, DCM
13. H₂NNHTs, MeOH

14. NaH, reflux, toluene
15. OsO₄, NMO, acetone, water
16. TsCl, DMAP, DCM
17. DBU, DMF, 115 °C
18. PDC, DCM
19. CuCN, MeLi, BF₃·Et₂O, THF
20. LiHMDS, MeI, THF, -78 °C
21. Cp₂TiMe₂, toluene

1. Name of the reaction?
Lombardo–Takai olefination

4. Name of the reaction?
Horner–Wadsworth–Emmons olefination

8. Name of the occurring rearrangement?
Fritsch–Buttenberg–Wiechell rearrangement



14. Show a mechanism
Hint: a diyl intermediate is formed
See below

18. Name of the reaction?
Babler Dauben oxidation

21. Name of the reagent?
Petasis reagent

