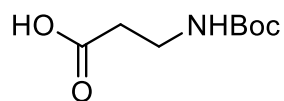


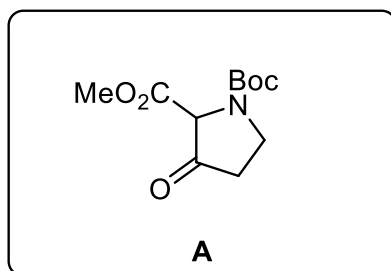
# Enantioselective Total Synthesis of (+)-Dihydro- $\beta$ -erythroidine

Clementson, S.; Jessing, M.; Pedersen, H.; Vital, P.; Kristensen, J. L.

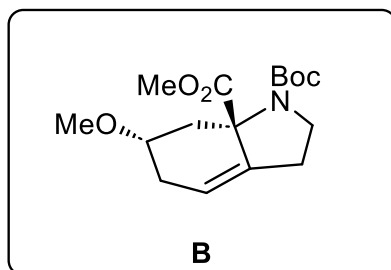
*J. Am. Chem. Soc.* **2019**, *141*, 8783–8786



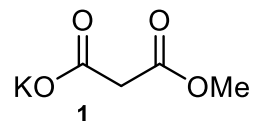
1-3



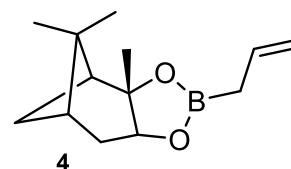
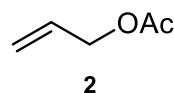
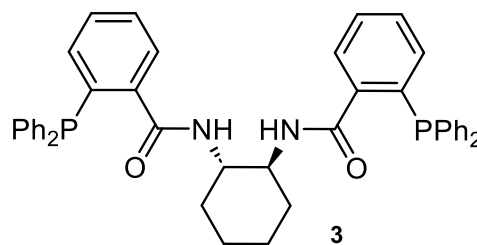
4-10



1. CDI, then **1**, Et<sub>3</sub>N, MgCl<sub>2</sub>
2. TsN<sub>3</sub>, Et<sub>3</sub>N
3. Rh<sub>2</sub>(OAc)<sub>4</sub>, 90 °C



4. [PdCl(allyl)]<sub>2</sub>, K<sub>2</sub>CO<sub>3</sub>, **2**, **3**
5. OsO<sub>4</sub>, NMO, then NaIO<sub>4</sub>
6. CH(OMe)<sub>3</sub>, CSA
7. MePPh<sub>3</sub>Br, KOtBu
8. **4**, HCl (aq.)
9. Me<sub>3</sub>OBF<sub>4</sub>, Proton-sponge
10. Grubbs II, 80 °C

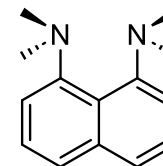


2. Name of reaction?  
**Regitz diazo transfer**

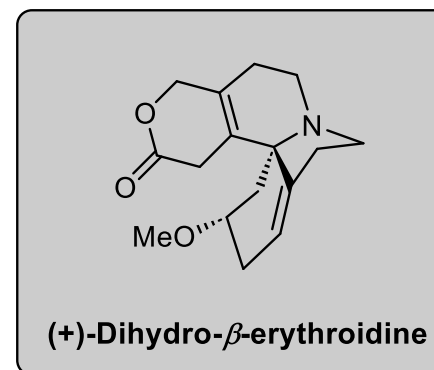
4. Name of reaction?  
**Tsuji-Trost asymmetric allylic alkylation**

5. Name of reaction?  
**Lemieux-Johnson oxidation**

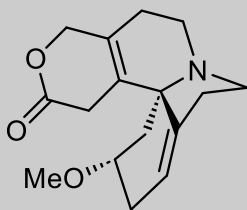
9. Structure of Proton-sponge?



10. Name of reaction?  
**Ring-closing metathesis (RCM)**

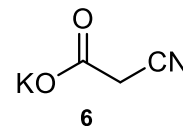
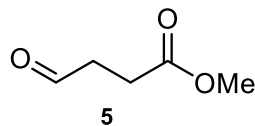


11-17

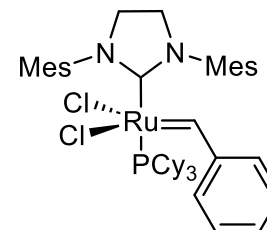


**(+)-Dihydro- $\beta$ -erythroidine**

11. TFA, then **5**, NaBH<sub>3</sub>CN, AcOH
12. KOtBu, 95 °C
13. NaH, Tf<sub>2</sub>O
14. DIBAL-H (3 equiv), -78 to 0 °C
15. TBSCl, imidazole
16. **6**, [PdCl(allyl)]<sub>2</sub>, S-Phos, mesitylene, 110 °C
17. HCl, MeOH/H<sub>2</sub>O, 85 °C



10. Structure of Grubbs II?



12. Name of reaction?

**Dieckmann condensation**

16. Structure of S-Phos?

