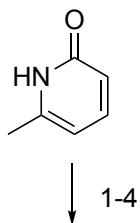


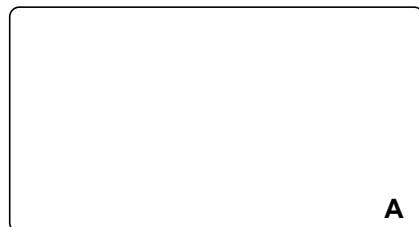
# Total Synthesis of (+)-Hosieine A

Yu-Wen Huang, Ke Kong, John L. Wood

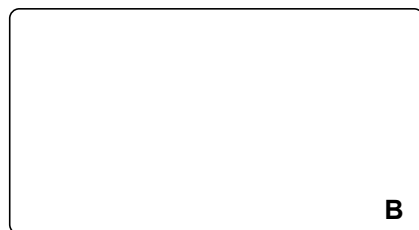
*Angew. Chem. Int. Ed.* **2018**, *57*, 7664–7667



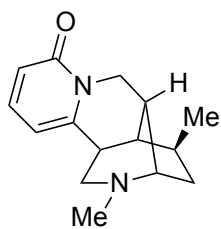
1-4



5



6-8



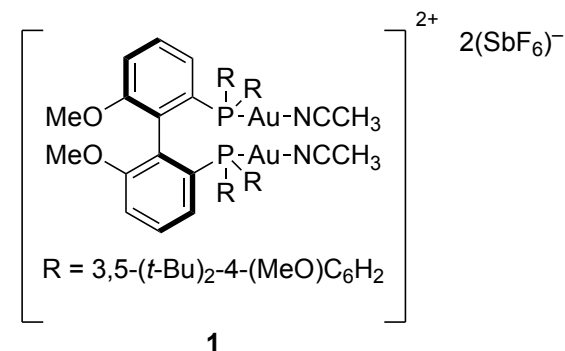
**(+)-Hosieine A**

- 1)  $\text{NCCH}_2\text{Cl}$ ,  $\text{K}_2\text{CO}_3$ , THF
- 2)  $\text{AlCl}_3$ ,  $\text{allylZnBr} \cdot \text{LiCl}$ ,  $-78^\circ\text{C}$ , THF  
then  $\text{HCl}$  (aq)
- 3) Trimethylsilylacetylene,  $n\text{-BuLi}$ ,  $\text{CeCl}_3$ ,  $-78^\circ\text{C}$ , THF
- 4) LDA, THF, methyl chloroformate  
then  $\text{PivCl}$ , then  $\text{MeOH}$ ,  $\text{K}_2\text{CO}_3$
- 5) 2 mol% **1**,  $\text{AcOH}$ ,  $\text{DCM}$ , 1 h  
then  $\text{MeOH}$ ,  $\text{AcCl}$ ,  $\text{NaHCO}_3$ , then  $\text{SiO}_2$
- 6)  $\text{Cs}_2\text{CO}_3$ ,  $\text{MeCN}$
- 7)  $\text{MeNH}_2$ ,  $\text{NaB(OAc)}_3\text{H}$ ,  $\text{AcOH}$ , THF
- 8)  $\text{BH}_3/\text{THF}$  (25 equiv.),  $0^\circ\text{C}$ , THF

Where is Professor John Wood?

*Hint:* There is an isomerization during step 2

*Hint:* 3 equiv. of LDA are used in step 4  
Why is  $\text{CeCl}_3$  used?



What is the name of the reaction in step 5?  
Please provide a mechanism.

*Hint:* The stereocenter formed has an (*S*) configuration

Explain the selectivity in step 7