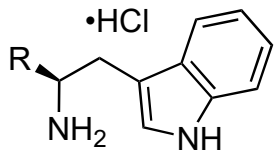


## Total Synthesis of (+)-Arborisidine

Z. Zhou, A. X. Gao, S. A. Snyder *J. Am. Chem. Soc.* **2019**, *141*, 7715-7720



R = CO<sub>2</sub>Me

1-3



6,7



- 1) 2,3-butadione, MeOH, 65 °C
- 2) NH<sub>3</sub>, MeOH *then* TFAA, Et<sub>3</sub>N, THF
- 3) NaBH<sub>3</sub>CN, 4-CF<sub>3</sub>C<sub>6</sub>H<sub>4</sub>CHO, MeOH/THF

*Please provide the name of the reaction in step 1.*

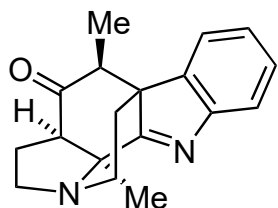
*Please propose a mechanism for step 3.*

- 6) 1-propynyllithium, THF, - 78 °C
- 7) TFAA, pyridine, CH<sub>2</sub>Cl<sub>2</sub> - 78 °C to 23 °C

8,9

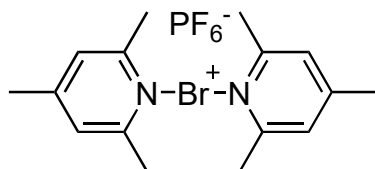


10-14

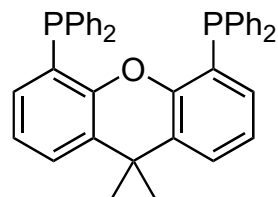


arborisidine

- 8)  $\text{Ph}_3\text{PAuCl}$ ,  $\text{AgBF}_4$ , MeOH, 40 °C  
9)  $\text{Br}(\text{coll})_2\text{PF}_6$ ,  $\text{CH}_2\text{Cl}_2$ , -78 °C to r.t.  
*then*  $\text{Pd}(\text{OAc})_2$ , Xantphos, CO (balloon),  
dioxane/MeOH/ $\text{Et}_3\text{N}$ , 70 °C



$\text{Br}(\text{coll})_2\text{PF}_6$



Xantphos

- 10)  $\text{Mn}(\text{dpm})_3$ ,  $\text{PhSiH}_3$ , *i*-PrOH/ $(\text{CH}_2\text{Cl}_2)_2$   
11)  $\text{NaBH}_4$ , MeOH, 23 °C to 100 °C  
12)  $\text{BH}_3 \cdot \text{THF}$ , *then*  $\text{H}_2\text{O}$ ,  $\text{Me}_3\text{NO}$   
13)  $\text{PhIO}$ ,  $\text{CH}_2\text{Cl}_2$   
14) DMP,  $\text{CH}_2\text{Cl}_2$

*Please propose a mechanism for step 8*