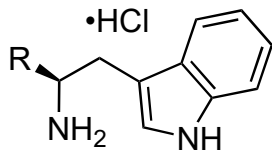


Total Synthesis of (+)-Arborisidine

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



R = CO₂Me

1-3



4,5



- 1) 2,3-butadione, MeOH, 65 °C
- 2) NH₃, MeOH *then* TFAA, Et₃N, THF
- 3) NaBH₃CN, 4-CF₃C₆H₄CHO, MeOH/THF

Please provide the name of the reaction in step 1.

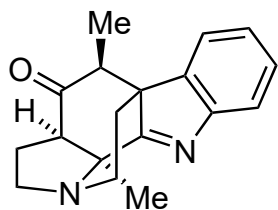
Please propose a mechanism for step 3.

- 4) 1-propynyllithium, THF, - 78 °C
- 5) TFAA, pyridine, CH₂Cl₂ - 78 °C to 23 °C

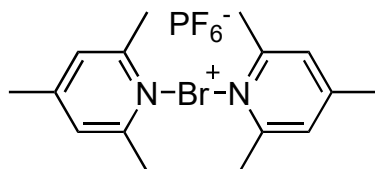
6,7



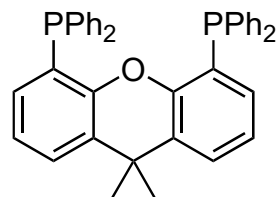
8-12



- 6) Ph_3PAuCl , AgBF_4 , MeOH , $40\text{ }^\circ\text{C}$
7) $\text{Br}(\text{coll})_2\text{PF}_6$, CH_2Cl_2 , $-78\text{ }^\circ\text{C}$ to r.t.
then $\text{Pd}(\text{OAc})_2$, Xantphos, CO (balloon),
dioxane/ $\text{MeOH}/\text{Et}_3\text{N}$, $70\text{ }^\circ\text{C}$



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



Xantphos

- 8) $\text{Mn}(\text{dpm})_3$, PhSiH_3 , $i\text{-PrOH}/(\text{CH}_2\text{Cl}_2)_2$
9) NaBH_4 , MeOH , $23\text{ }^\circ\text{C}$ to $100\text{ }^\circ\text{C}$
10) $\text{BH}_3\cdot\text{THF}$, *then* H_2O , Me_3NO
11) PhIO , CH_2Cl_2
12) DMP , CH_2Cl_2

Please propose a mechanism for step 8