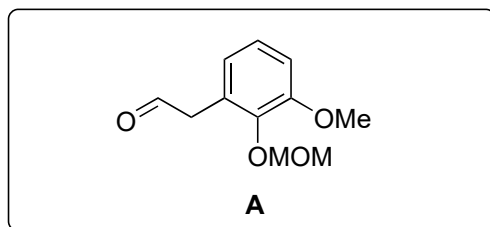
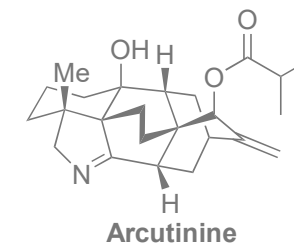


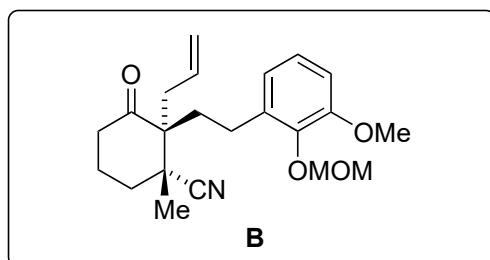
Total Synthesis of Arcutinine

Wei Nie, Jing Gong, Zhihao Chen, Jiazhen Liu, Di Tian, Hao Song, Xiao-Yu Liu, Yong Qin

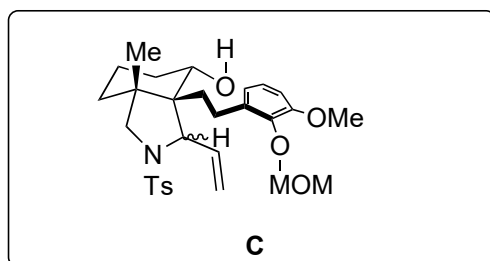
J. Am. Chem. Soc. **2019**, *141*, 9712



1-5



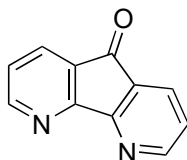
6-9



- 1) 1,3-cyclohexanedione, Hantzsch ester, L-proline, then Me_2SO_4 , K_2CO_3
- 2) MeLi
- 3) $\text{BF}_3 \cdot \text{OEt}_2$, TMS-CN
- 4) MeLi, then $\text{ClCO}_2\text{Allyl}$, HMPA
- 5) $\text{Pd}(\text{PPh}_3)_4$, then MOMCl, DIPEA

- 6) $\text{PdCl}_2(\text{MeCN})_2$, PhMe, 110 °C, then MOMCl, DIPEA
- 7) LAH
- 8) TsCl
- 9) $\text{Pd}(\text{OAc})_2$, DAF, PhMe, O_2 , 50 °C

DAF:



- 1) Name? reductive Knoevenagel condensation

- 5) Name? Tsuji allylation

- 6) hint: A side reaction takes place under these conditions (Cleavage of the MOM-group)

- 9) Name? propose mech (Wacker reaction)

