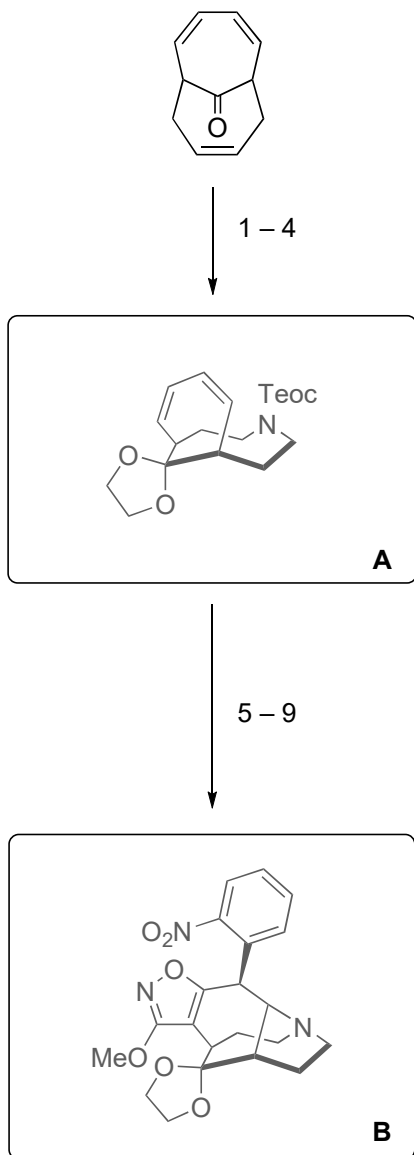
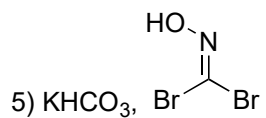


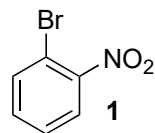
Total Synthesis of Actinophyllic Acid  
 Y. Yoshii, H. Tokuyama, D. Y.-K. Chen  
*Angew. Chem. Int. Ed.* 2017, *56*, 12277 – 12281.



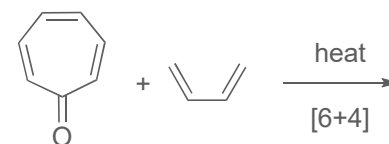
- 1) ethylene glycol, *p*TsOH
- 2) OsO<sub>4</sub>, NMO
- 3) Pb(OAc)<sub>4</sub>, then NaBH(OAc)<sub>3</sub>, PMBNH<sub>2</sub>
- 4) TeocCl



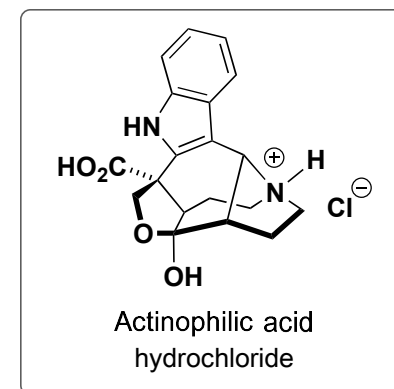
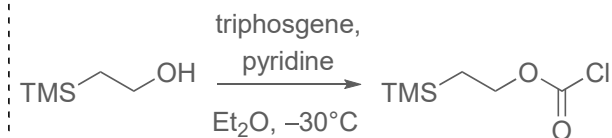
- 5) KHCO<sub>3</sub>, Br-C(=N-OH)-Br
- 6) MeOLi
- 7) DDQ
- 8) TFA, concentration
- 9) Pd(OAc)<sub>2</sub>, P(2-furyl)<sub>3</sub>, Cs<sub>2</sub>CO<sub>3</sub>, **1**



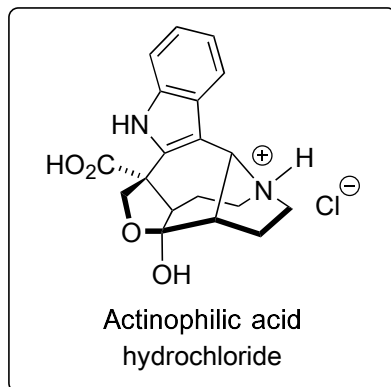
How would you prepare the starting material?



How would you prepare TeocCl?



10 – 12



- 10) HCl, MeOH
- 11) PdCl<sub>2</sub>, H<sub>2</sub>
- 12) LDA, CH<sub>2</sub>O, then TFA, then 4M aq. HCl

Please explain the reaction mechanism of step 9.

