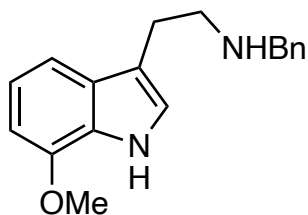


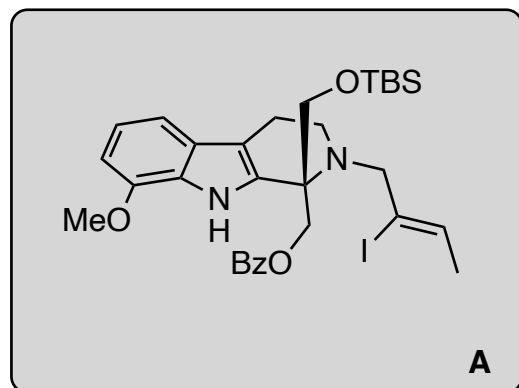
Asymmetric Total Synthesis of Alstrofine G Utilizing a Catalytic Asymmetric Desymmetrization Strategy

Zheng, N.; Wang, C.; Xu, H.; Zheng, M.; Jiang, H.; Chen, K.; Ma, Z.

Angew. Chem. Int. Ed. **2024**, 63 (34), e202407127.

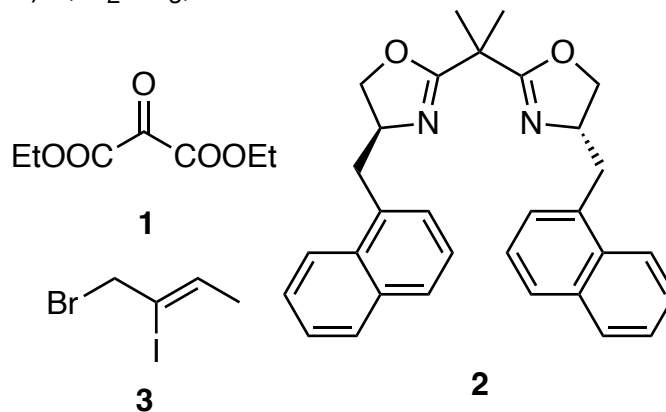


1–6



7–11

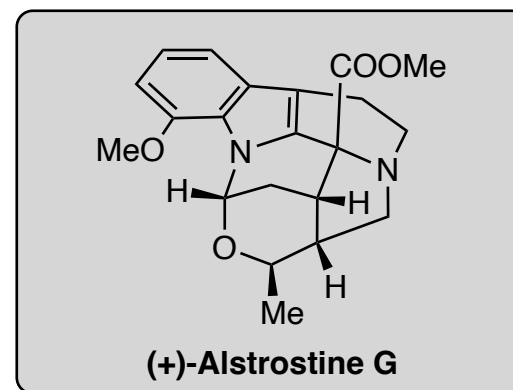
- 1) **1**, conc. HCl, EtOH, Δ
- 2) LiAlH_4 (2.5 equiv.)
- 3) **2**, CuCl_2 , BzCl (1.5 equiv.), NEt_3 , -78°C
- 4) TBSOTf, lutidine
- 5) Pd/C, H_2
- 6) **3**, K_2CO_3 , 70°C

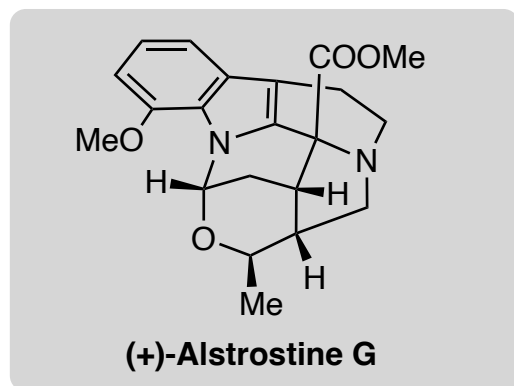
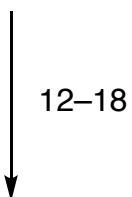
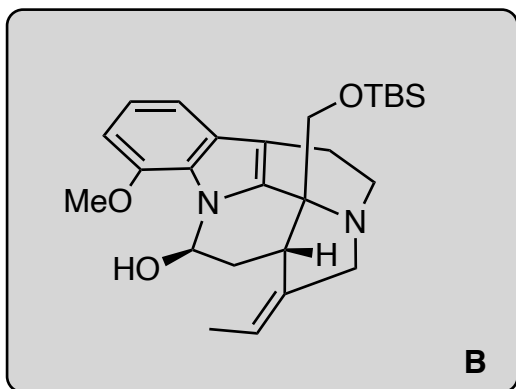


- 7) DIBAL-H (2.5 equiv.), 0°C
- 8) DMP
- 9) NaH, $(\text{EtO})_2\text{P}(\text{O})\text{CH}_2\text{COOEt}$
- 10) DIBAL-H (3.0 equiv.), 0°C
- 11) $\text{Pd}(\text{OAc})_2$, PPh_3 , NEt_3 , 90°C

- 1) Name of the reaction? *Pictet–Spengler*.
- 3) *Hint*: Read title.

- 9) Name of the reaction? *HWE*.
- 11) *Hint*: two rings are formed. Name of the reaction? Please draw the mechanism. *Heck cyclization*.





- 12) TMS-imidazole
- 13) $K_2OsO_4 \cdot 2H_2O$, citric acid, NMO, $t\text{-BuOH}/H_2O$
- 14) DMP
- 15) Sml_2 then $NaBH_4$
- 16) $BF_3 \cdot OEt_2$ then TBAF
- 17) IBX, 60 °C
- 18), I_2 , KOH, MeOH

16) *Hint*: one ring is formed.

Mechanism for step 11)

