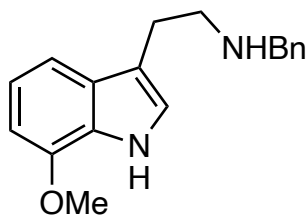


Asymmetric Total Synthesis of Alstrofine G Utilizing a Catalytic Asymmetric Desymmetrization Strategy

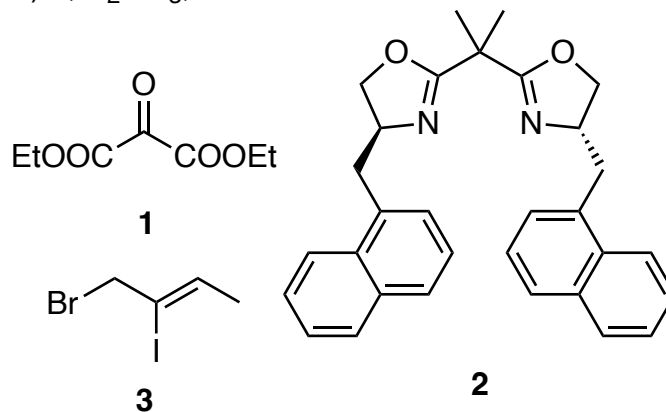
Zhng, N.; Wang, C.; Xu, H.; Zheng, M.; Jiang, H.; Chen, K.; M, Z.

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



1–6

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



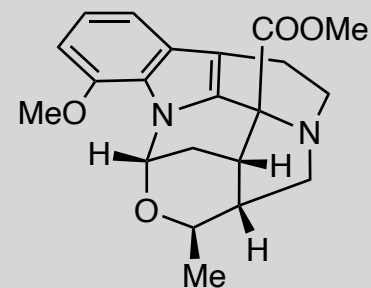
- 7) DIBAL-H (2.5 equiv.), 0°C
- 8) DMP
- 9) NaH, $(\text{EtO})_2\text{P}(\text{O})\text{CH}_2\text{COOEt}$
- 10) DIBAL-H (3.0 equiv.), 0°C
- 11) $\text{Pd}(\text{OAc})_2$, PPh_3 , NEt_3 , 90°C

1) Name of the reaction?

3) *Hint*: Read title.

9) Name of the reaction?

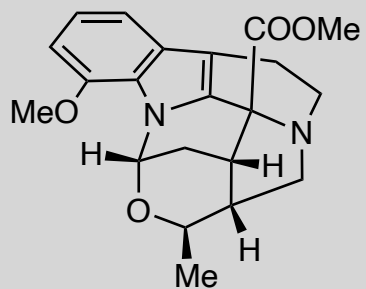
11) *Hint*: two rings are formed. Name of the reaction? Please draw the mechanism.



(+)-Alstrofine G

B

12–18



(+)-Alstroline G

- 12) TMS-imidazole
- 13) $K_2OsO_4 \cdot 2H_2O$, citric acid, NMO, t -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.