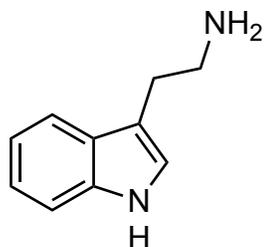
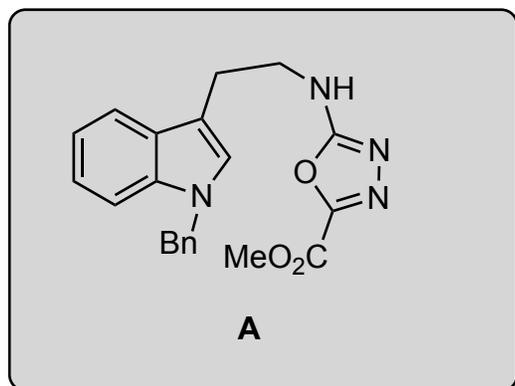


Total Synthesis of (+)-Fendleridine (Aspidoalbidine) and (+)-1-Acetylaspidoalbidine

E.L. Campbell, M. Zuhl, C.M. Liu, D.L. Boger
J. Am. Chem. Soc. 2010, 132, 9, 3009–3012

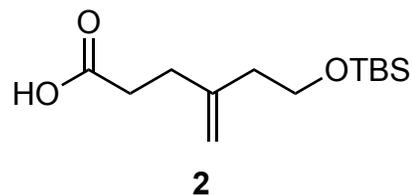
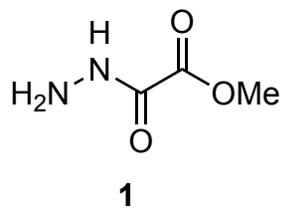


1-6



7-10

- 1) phthalic anhydride
- 2) NaH, BnBr
- 3) N₂H₄, H₂O
- 4) CDI
- 5) **1**, AcOH
- 6) TsCl, NEt₃



- 7) EDCI, DMAP, **2**
- 8) *o*-Cl₂C₆H₄, 180 °C
- 9) NH₃, MeOH *then* TFAA, pyridine
- 10) HF-pyridine

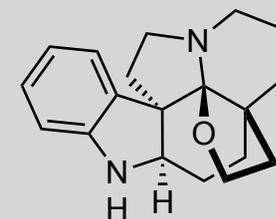
Name of starting material?
tryptamine

5) Hint: an 1,3,4-oxadiazole is formed

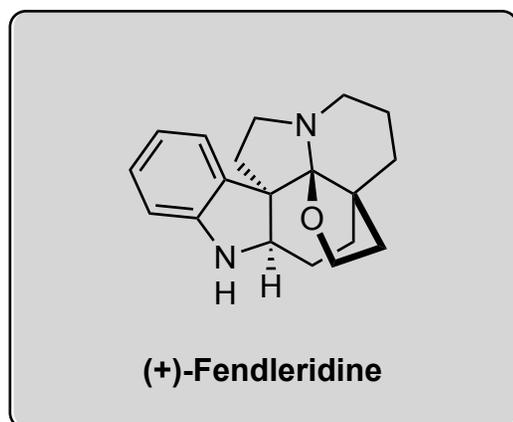
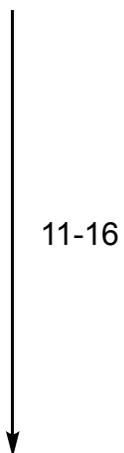
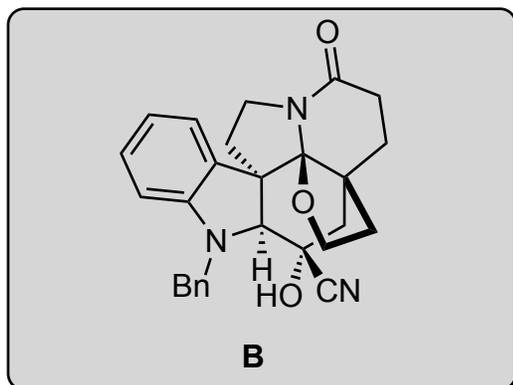
7) Hint: Tandem [4+2] / [3+2]
cycloaddition

8) Hint: loss of signals at $\delta =$
171.2 ppm (¹³C-NMR) and $\delta =$
3.66 ppm (s, ¹H-NMR)

9) two reactions occur (a
cyanohydrine is formed)



(+)-Fendleridine



- 11) Na-selectride
- 12) NaH, CS₂ then MeI
- 13) AIBN, Bu₃SnH
- 14) Lawesson's reagent
- 15) Raney-Ni
- 16) Na, NH₃, *t*-BuOH

10) Hint: C₂₆H₂₈N₂O₃

11 & 12) Name of reaction?
Barton-McCombie deoxygenation

13) Structure of Lawesson's reagent?

