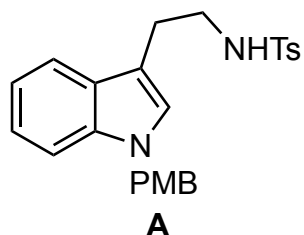
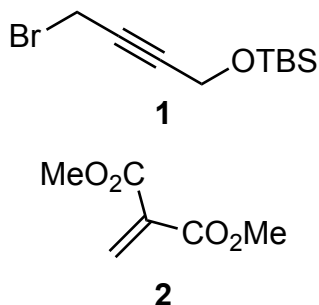


Allenamide-Initiated Cascade [2+2+2] Annulation Enabling the Divergent Total Synthesis of (-)-Deoxoapodine, (-)-Kopsifoline D and (±)-Melotenine

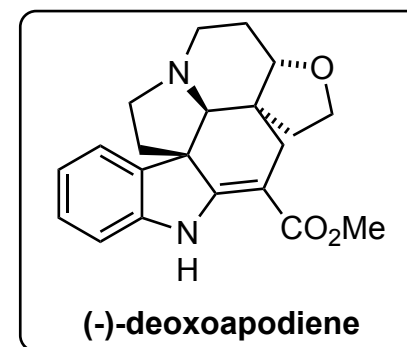
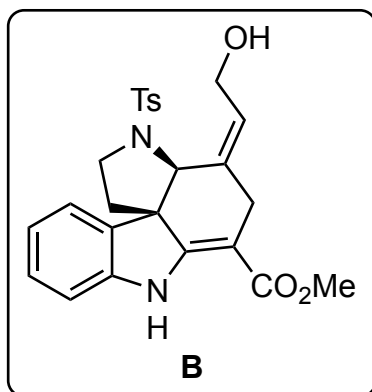
L.-P. Zhao, P.-J. Li, L. Wang, *Angew. Chem. Int. Ed.* **2022**, *61*, e202207360.



- 1) K_2CO_3 , **1**
- 2) $KOt-Bu$ (0.2 equiv)
- 3) $In(OTf)_3$, **2**, 3 Å MS
- 4) $LiCl$, H_2O
- 5) *p*-toluenethiol, TFA
- 6) DDQ

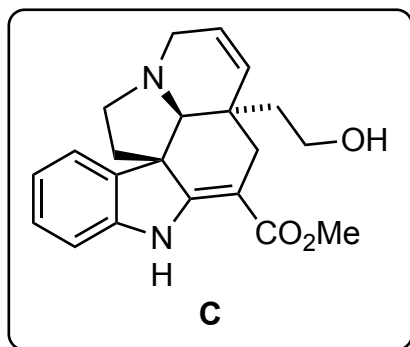


- 1) From which commercially available source stems the **A**?
[Tryptamine](#)
- 3) Provide a mechanism! Hint: two rings form
[last page](#)
- 4) Name of reaction?
[Krapcho decarboxylation](#)
- 5) Hint: two positions react



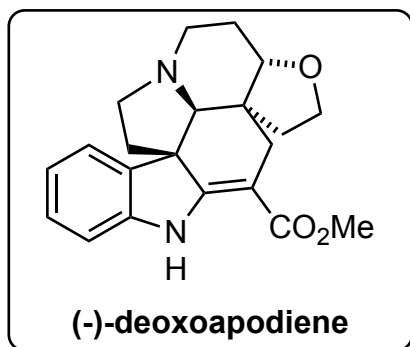
B

- 7) $\text{CH}_3\text{C}(\text{OCH}_3)_3$, hydroquinone, 200 °C
8) Na, naphthalene
9) allyl bromide, LiI
10) HG II
11) DIBAL-H



↓

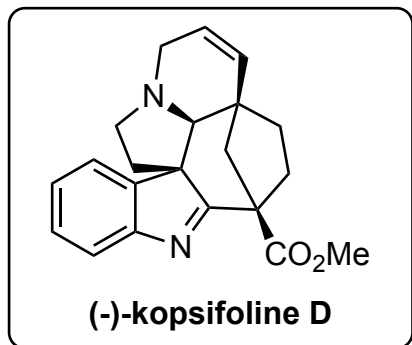
- 12) $(p\text{-CF}_3\text{C}_6\text{H}_4)_3\text{PAuCl}$, AgNTf_2



- 7) Name of the reaction?
Johnson Claisen
10) Structure of catalyst
12) Classify the cyclization according to the Baldwin rules
5-exo-trig

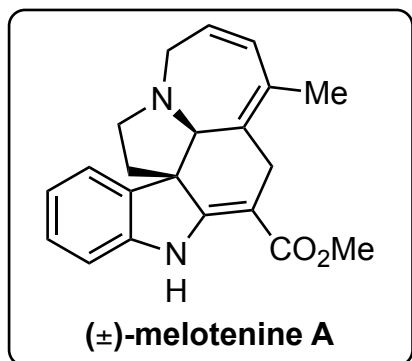
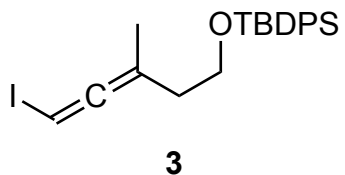
C

13) KO^t-Bu, TsCl



A

14) CuTC, DMEDA, Cs₂CO₃, **3**
15) In(NTf₂)₃, **2**, 3 Å MS
16) LiCl, H₂O
17) Pd/C, H₂
18) DDQ
19) Na, naphthalene
20) allyl bromide *then* TBAF
21) PPh₃, CBr₄
22) DBU
23) HG II



3)

