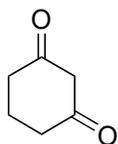
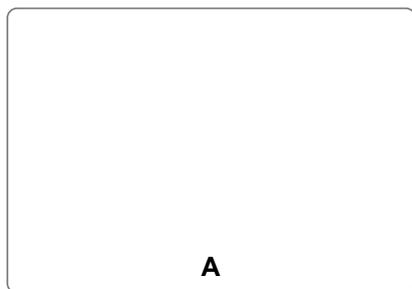


# Total Synthesis of Acoapetaludine A Enabled by a Rhodium-Catalyzed Domino Cyclization

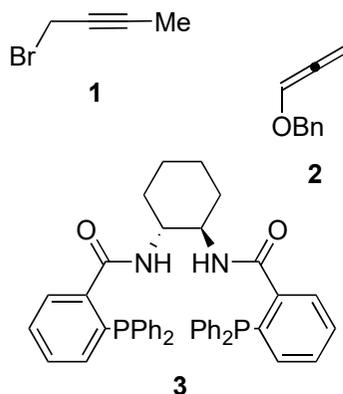
Y. Zhang, L. Wang, X. Lei, Y. Jia, "Total Synthesis of Acoapetaludine A Enabled by a Rhodium-Catalyzed Domino Cyclization" J. Am. Chem. Soc. 2025, 147, 47904–47910.



1-13



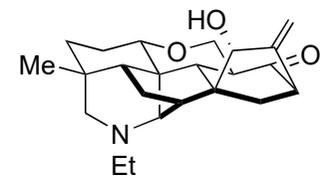
- 1) KOH, **1**
- 2) **2**, (allyl)<sub>2</sub>Pd<sub>2</sub>Cl<sub>2</sub>, **3**
- 3) PhB(OH)<sub>2</sub>, [Rh(cod)OH]<sub>2</sub>
- 4) NaBH<sub>4</sub>
- 5) SOCl<sub>2</sub>, pyridine
- 6) MOMBr, DIPEA, TBAI
- 7) BH<sub>3</sub>•THF then NaBO<sub>3</sub>•4H<sub>2</sub>O
- 8) IBX
- 9) Ph<sub>3</sub>PCH<sub>2</sub>OCH<sub>3</sub>Cl, Cl<sub>3</sub>CCO<sub>2</sub>H
- 10) MeI, *t*-BuOK
- 11) EtNH<sub>2</sub>, Ti(O*i*-Pr)<sub>4</sub>, NaBH<sub>4</sub> then TFAA, DMAP
- 12) NaIO<sub>4</sub>, RuCl<sub>3</sub>•3H<sub>2</sub>O
- 13) NaOH



2) Name of the reaction?

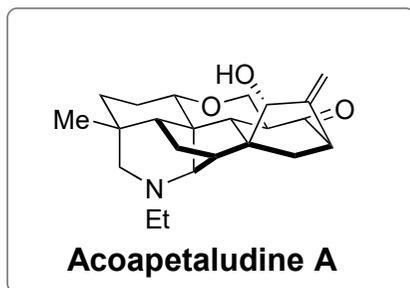
12) Hint: Oxidation in two positions

13) Hint: deprotection/retro-aldol/intramolecular Mannich reaction

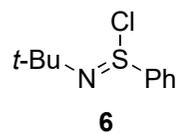
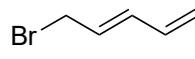
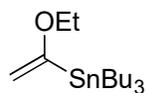


**A**

14-25



- 14) Comins' reagent, LiHMDS
- 15) I<sub>2</sub>, NaHCO<sub>3</sub>
- 16) HCl
- 17) Pd(PPh<sub>3</sub>), LiCl, CuCl, **4**
- 18) NaH, **5**
- 19) AlCl<sub>3</sub>
- 20) LiHMDS, F<sub>3</sub>CCO<sub>2</sub>CH<sub>2</sub>CF<sub>3</sub> then *p*-ABSA
- 21) Rh<sub>2</sub>(OAc)<sub>4</sub>
- 22) H<sub>2</sub>SO<sub>4</sub>, AcOH
- 23) Ac<sub>2</sub>O, CH<sub>2</sub>(NMe<sub>2</sub>)<sub>2</sub>
- 24) LiAlH<sub>4</sub>
- 25) DBU, **6**



17) Name of the reaction?