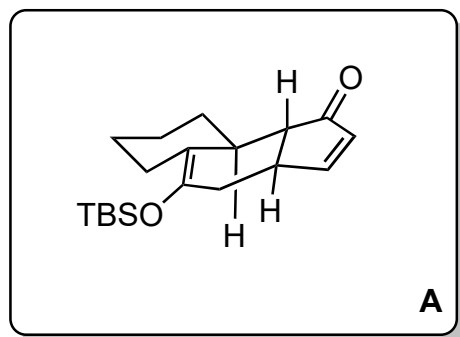
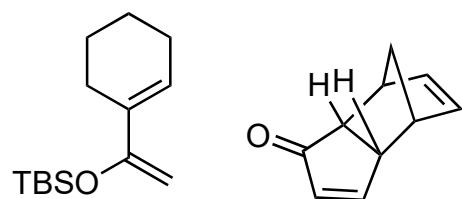
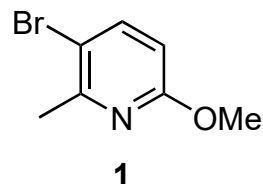


# Total Synthesis of Alkaloid (±)-G.B 13

Kimberly K. Larson and Richmond Sarpong



- 1) Cat. Yb(tmhd)<sub>3</sub>, 110 °C
- 2) Flash vacuum pyrolysis (600 °C, 3 mbar)



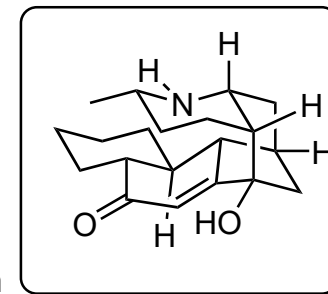
- 3) **1**, LDA -78 °C then **A**
- 4) HCl, THF/MeOH then K<sub>2</sub>CO<sub>3</sub>
- 5) SO<sub>3</sub>•pyr, DMSO/pyridine then KH<sub>2</sub>PO<sub>4</sub>/NaOH buffer
- 6) H<sub>2</sub>, cat PtO<sub>2</sub>, Na<sub>2</sub>CO<sub>3</sub>
- 7) B(pin)<sub>2</sub>, cat. Pd<sub>2</sub>(dba)<sub>3</sub>•CHCl<sub>3</sub>, cat. Py<sub>3</sub>HBF<sub>4</sub>, KOAc
- 8) DMP
- 9) Et<sub>3</sub>N, SiO<sub>2</sub>
- 10) Cat. [Rh(cod)(MeCN)<sub>2</sub>]<sub>2</sub>BF<sub>4</sub>, Et<sub>3</sub>N (2 equiv)

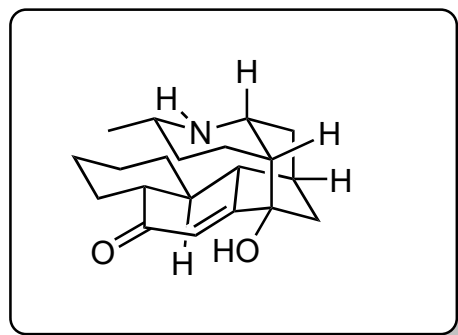
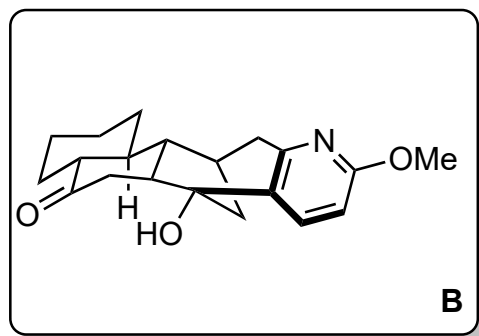
1) How would you synthesise the dienophile? Page 3

2) Classify the reaction  
Retro [4+2], retro Diels-Alder,

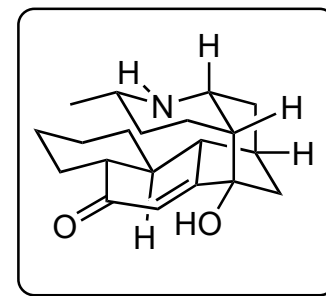
- 4) Hint: K<sub>2</sub>CO<sub>3</sub> for epimerization
- 5) Hint: This reaction is usually done with a chromium species
- 9) Hint: for epimerization

- 5) Name of the reaction  
Babler Ox
- 6) Name of the catalyst  
Pearlmans cat
- 8) Please draw the mechanism





- 11) NaSEt
- 12) Tf<sub>2</sub>O, pyr
- 13) AlMe<sub>3</sub>, cat Pd(Ph<sub>3</sub>)<sub>4</sub>
- 14) cat. Rh/Al<sub>2</sub>O<sub>3</sub>, H<sub>2</sub> 69 bar
- 15) BnOCOC<sub>2</sub>H<sub>5</sub>, aq NaHCO<sub>3</sub>/PhMe
- 16) IBX, TsOH DMSO/PhH
- 17) TMSI, CH<sub>2</sub>Cl<sub>2</sub>



1)

