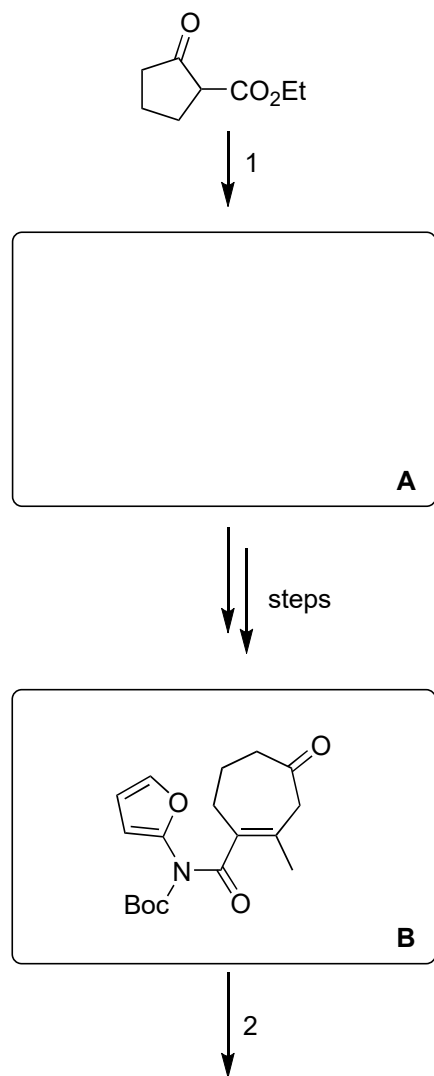


Total Synthesis of (-)-Himalensine A

Heyao Shi, Iacovos N. Michaelides, Benjamin Darses, Pavol Jakubec, Quynh Nhu N. Nguyen, Robert S. Paton, and Darren J. Dixon

JACS **2017**, *139*, 17755-17758.



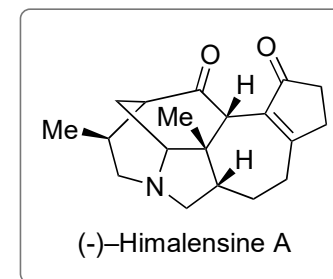
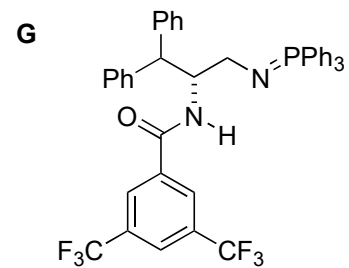
1) NaH, **F**, THF, 60 °C

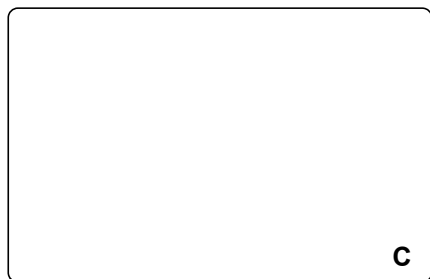


Draw the transition state of step 2

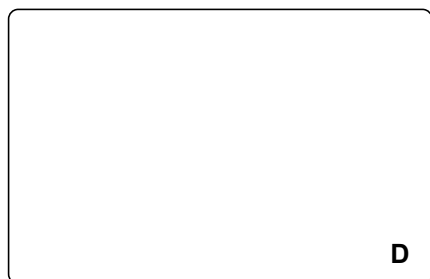
Hint: this transformation works also with DABCO

2) 5 mol% **G**, PhMe, 60 °C





3-9



10-16



17

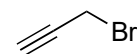
(-)-Himalensine A

- 3) TFA, DCM
- 4) Pd(OH)₂, H₂, MeOH
- 5) **H**, NaHMDS, DMF
- 6) LAH, THF
then MeOH, HCl
- 7) TIPSOTf, lutidine, DCM
- 8) Bu₃SnH, AIBN, PhMe, 90 °C
- 9) CSA, DCM, 0 °C

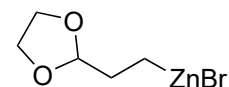
- 10) [Ir(COD)PCy₃Py][PF₆],
H₂/Ar (1:2), DCM
- 11) NBS, DCM
- 12) pTSA, O₂, pyridine, reflux
- 13) NaHMDS, THF, -78 °C
then PhNTf₂
- 14) **I**, Pd₂(dba)₃, DTBPF, NMP
- 15) HCl, THF
- 16) 30 mol% **J**, Et₃N, EtOH, 60 °C

- 17) 10 mol% [Ir(CO)(PPh₃)₂Cl],
TMDS, PhMe
then HCO₂H, 60 °C

H

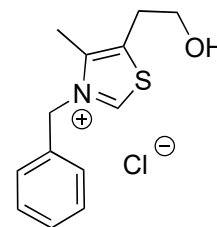


I



Step 10: name of the catalyst?

J



Step 17: name of the catalyst?

