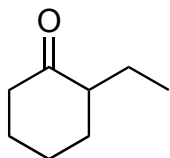
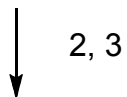
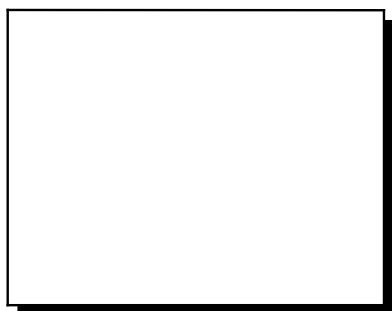


Total Synthesis of (-)-Mersicarpine (*J. Am. Chem. Soc.* ASAP)



1) (S)-(-)-1-phenylethylamine,
p-TsOH, reflux, then
methyl acrylate,
hydroquinone, reflux then H⁺

A

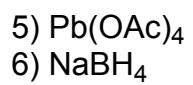
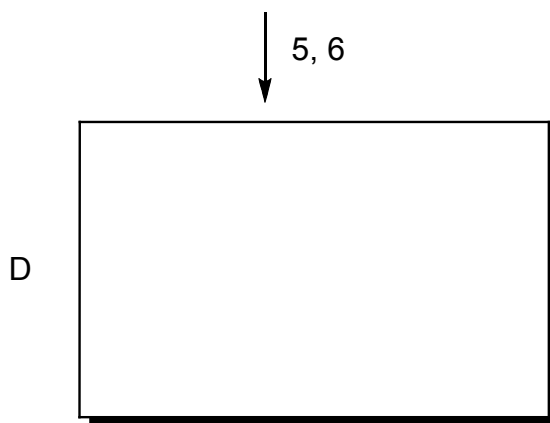
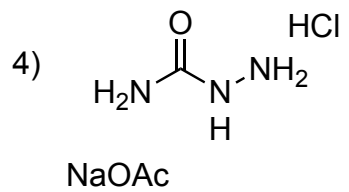
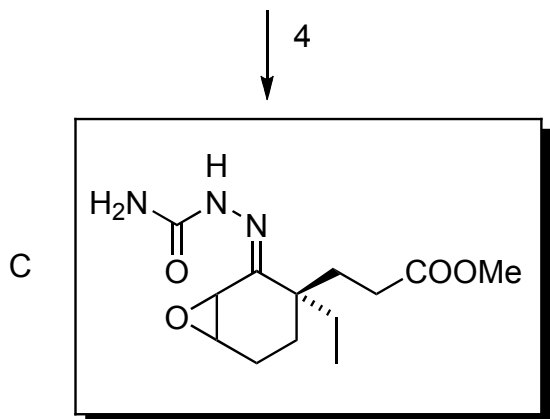


2) IBX, DMSO 85°C
3) H₂O₂, NaOH 0°C

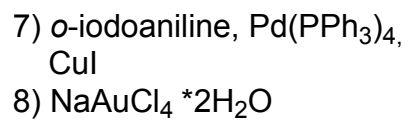
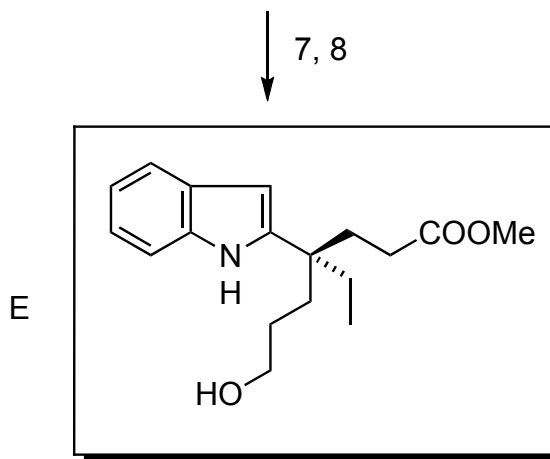
B



How is the starting material made?



Here a fragmentation occurs, can you name it?



Name of the coupling reaction?

9, 10

9) $\text{PhN}^{\oplus}\equiv\text{N}^{\ominus}\text{Cl}^-$ NaOAc
10) NaH, 4A MS, MsCl, TEA

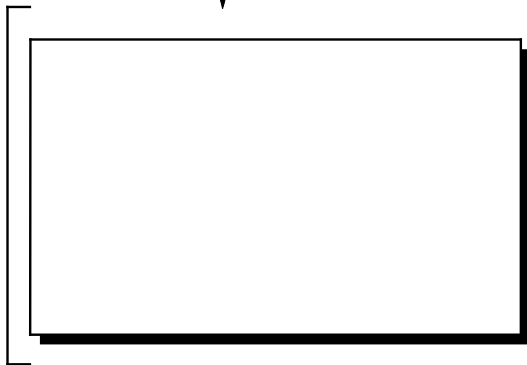
F



11

11) H_2 , Pd/C

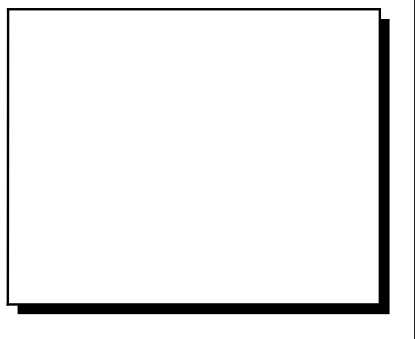
G



12

12) NaHCO_3 , *i*-PrOH-DCM, reflux
13) O_2 , DMS

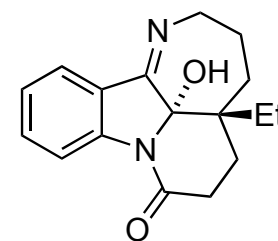
H



From here three step one-pot synthesis to the natural product

Final step is an observed autooxidation.
Try to figure out a mechanism.
Reduction can be achieved by DMS or another equivalent of structure **H**

13



(-) Mersicarpine