Total Synthesis of Isodihydrokoumine

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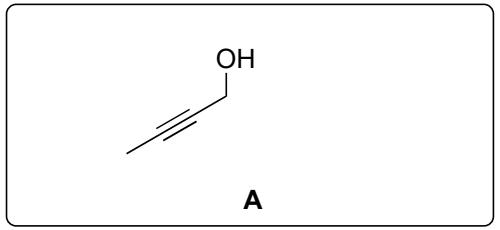
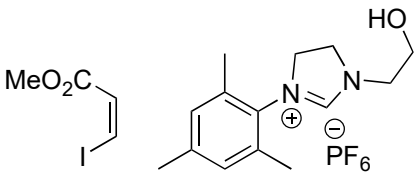


A

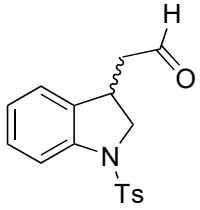
1–6

1) *n*-Bu_3SnH, $Pd(PPh_3)_4$, then **B**
2) vinylmagnesiumbromide, Cu(OTf)2, **C**, DMPU, TMSCl
3) LAH
4) PPh_3, DIAD, Boc-NH-OBoc
5) TFA, then NEt_3, Na_2SO_4, **D**
6) PhMe, reflux

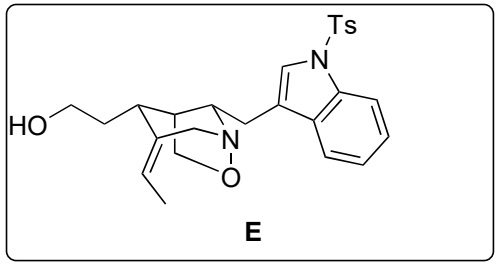
1) Name? Stille coupling
4) Name? Mitsunobu
5) Which functional group is formed? Nitrone
6) Name? Huisgen Cycloaddition



B **C**



D

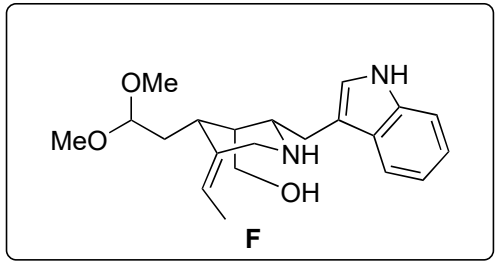


E

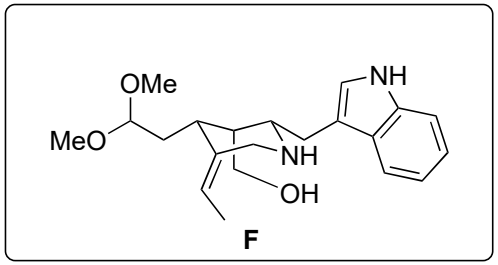
7–9

7) Mg, MeOH
8) $(COCl)_2$, DMSO, DCM, *then* NEt_3, then $(MeO)_3CH$, PPTS, MeOH
9) SmI_2

8) Name? Swern



F

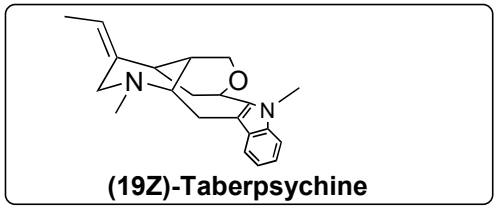


F

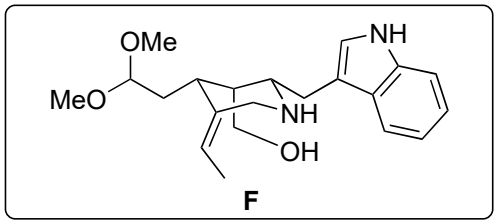
10–11

10) BF_3•OEt2, MeCN
11) CH_2O, $NaBH_3CN$

10) Mechanism?



(19Z)-Taberpsychine

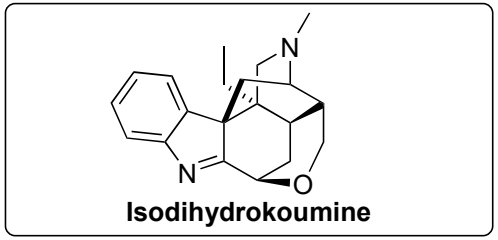


F

12–13

10') NaI, TMSCl
11') CH_2O, $NaBH_3CN$

10') Mechanism?



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