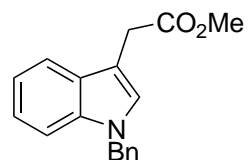
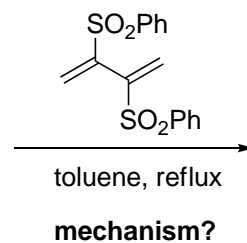


Stearman et al., J. Org. Chem., ASAP, April 2009



1.) POCl₃, DMF
2.) NH₂OH.HCl, MeOH

A



B

Pd(OH)₂, H₂,
AcOH, EtOAc

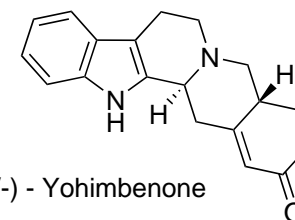
C

1.) MVK, NEt₃
2.) Bu₃SnH, AIBN, Δ

D

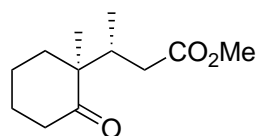
1.) Pyrrolidine, AcOH
2.) LAH
3.) MNO₂
4.) AlCl₃

tetracycle



(+/-) - Yohimbenone

Honda et al. Angew. Chem. Int. Ed. 2008, 47, 131-133



1.) TMSCl, NEt₃, DMF, 130°C
2.) LAH
3.) BzCl, pyr, DCM, 0°C
4.) Pd(OAc)₂, DMSO, O₂, 80°C

E

1.) MgBr, CuCN, THF, -78°C
2.) NaHMDS, PhNTf₂, THF, -78°C
3.) TMS-MgCl, Pd(PPh₃)₄, THF, Δ
4.) 3N NaOH, THF/MeOH/DMF, Δ
5.) TPAP, NMO, MS4A, DCM, 0°C

F

pTsOH, CHCl₃, reflux

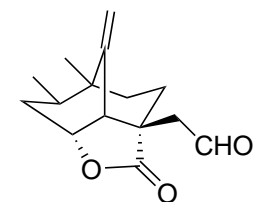
G

DBE = 4

1.) TPAP, NMO,
MS4A, DCM 0°C
2.) NaBH₄, MeOH, 0°C
3.) OsO₄, NaIO₄, 2,6-lut,
Dioxane/ H₂O

H

1.) AgCO₃, benzene, reflux
2.) LDA, THF/HMPA, allyliodide
3.) OsO₄, NaIO₄, 2,6-lut,
Dioxane/ H₂O



(+) - Upial