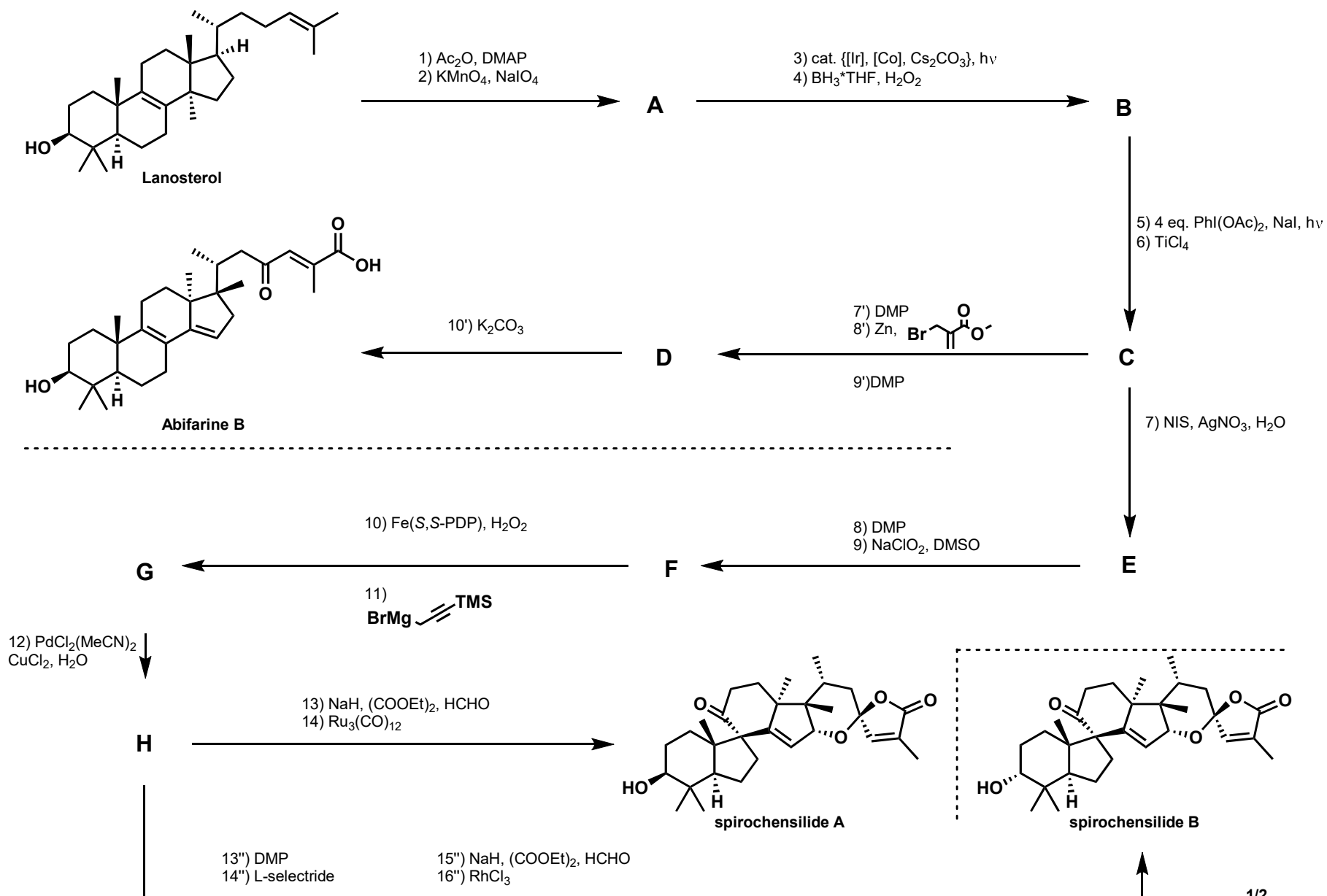
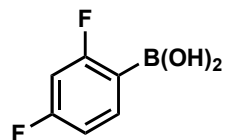


Synthesis of Spirochensilide A, Spirochensilide B, and Abifarine B

Denksport Lukas Holz 13.07.2022

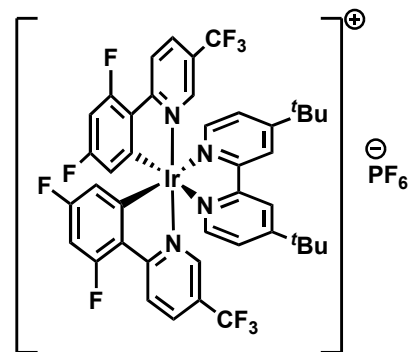




a) Suzuki coupling Partner?
Pd(PPh₃)₄, NaHCO_{3(aq)}

I

b) IrCl₃ * x H₂O
c) DTBPY
d) NH₄PF_{6(aq)}

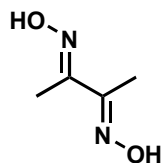


[Ir]
or
Ir[dF(CF₃)ppy]₂(dtbbpy)PF₆
or

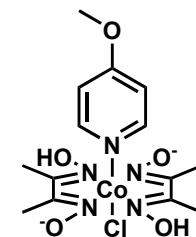
[4,4'-bis(1,1-dimethylethyl)-2,2'-bipyridine-N1,N1']bis[3,5-difluoro-2-[5-(trifluoromethyl)-2-pyridinyl-N]phenyl-C]iridium(III) hexafluorophosphate

Hints:

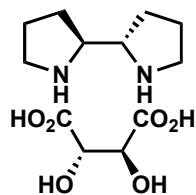
- Step 3: Terminal olefin formed
- Steps 5+6: one methyl group per step is rearranged
- DOI: 10.1002/anie.201604704
- Step 7: Spiro system formation



e) CoCl₂ * x H₂O
air
f) 4-methoxypyridine



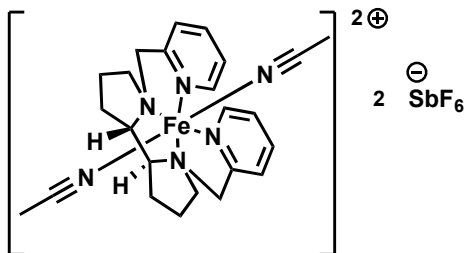
[Co]
or
Co(dmgh)₂(4-OMe-py)Cl
or
chloro(4-methoxypyridine)bis(dimethylglyoximate)cobalt(III)



g) 2-chloromethylpyridinium chloride
NaOH

J

h) FeCl₂ * 4 H₂O, MeCN
i) AgSbF₆



Fe(S,S'-PDP)
or
[Fe(S,S'-PDP)(MeCN)₂](SbF₆)₂
or
White-Chen catalyst
for selective aliphatic C-H oxidation