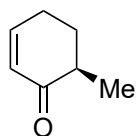


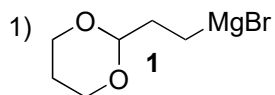
Formal Total Synthesis of (+)-Pleuromutilin
E. P. Farney, S. S. Feng, F. Schäfers, S. E. Reisman
JACS 2018, *140*, 1267-1270.



1 – 3



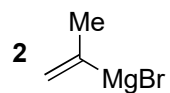
4 – 8



CuCN·2LiCl, TMSCl, THF, -45 °C, then 1

2) Pd(OAc)₂, DMSO, O₂

3) 2, CuI



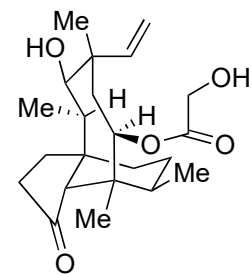
4) TCCA, EtOAc

5) HCl (aq), THF, 70 °C

6) CeCl₃·2LiCl, MeMgCl

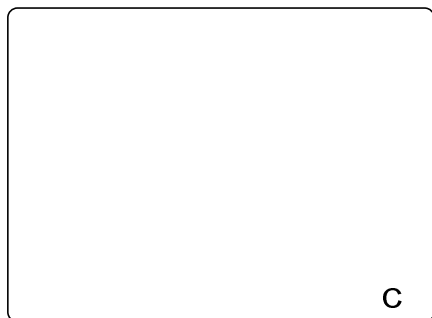
7) PCC, CH₂Cl₂

8) KH₂PO₄, NaI, DMSO, 95 °C

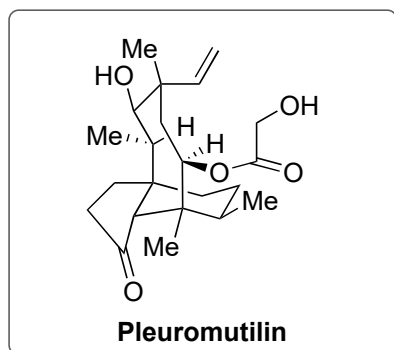


Pleuromutilin

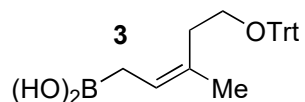
9 – 13



14 – 17



9) **3**, (*R*)-3,3'-Br₂-BINOL, *t*-BuOH, 3 Å MS, PhMe



10) MOMCl, *i*-Pr₂NEt

11) HCO₂H, Et₂O

12) [Cu(MeCN)₄]OTf, 4-OMebpy, ABNO, 1-methylimidazole

13) SmI₂ (3 equiv.), H₂O, THF, 0 °C, 5 min

then TMSCl (5 equiv)

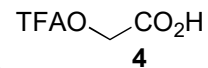
14) LiHMDS, TIPSOTf

15) Mn(dpm)₃, PhSiH₃, TBHP, *i*-PrOH

16) Li/NH₃, EtOH, Et₂O

17) **4**, EDCI, DMAP

then MeOH, NEt₃; then HCl/THF, 50 °C



ABNO: 9-Azabicyclo[3.3.1]nonane N-Oxyl