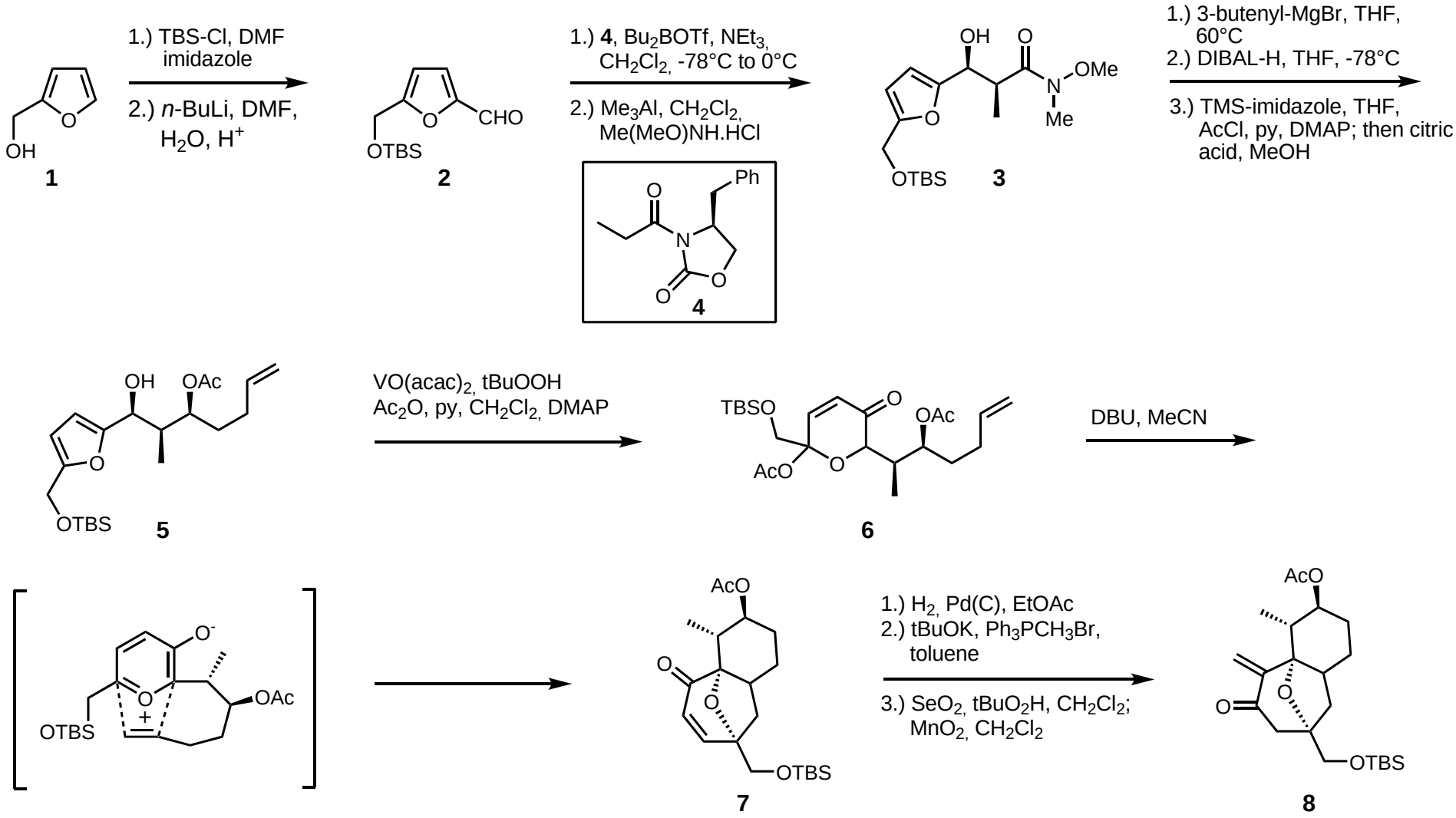
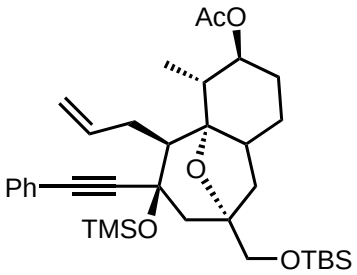
Total Synthesis of Phorbol

Denksport Rita Fürst
28.05.2009



1.) $(CH_2CH)_2Cu(CN)Li_2$,
Et_2O, then HCl
(axial protonation)

2.) PhCCLi, LiBr, THF
3.) HMPA, TMSCl



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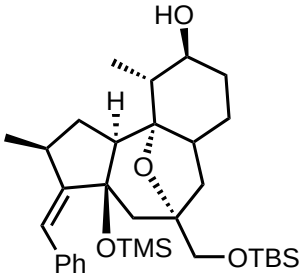
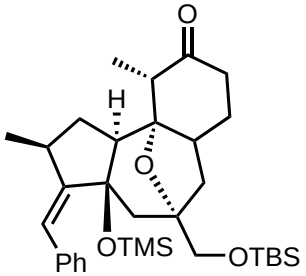
1.) Cp_2ZrCl_2, *n*BuLi,
THF; HOAc



10

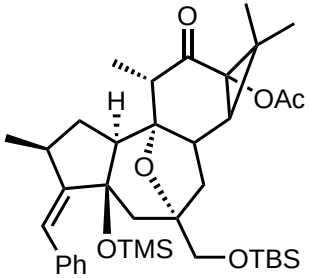
PCC, CH_2Cl_2,
NaOAc



11

1.) LDA, THF, -78°C, TMS-Cl
2.) PhSCl, CH_2Cl_2, -78°C
3.) $Pb(OAc)_4$, PhH
4.) m-CPBA, CH_2Cl_2

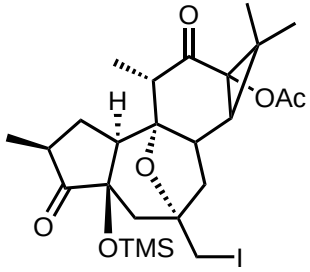
5.) $P(OEt)_3$, PhH
6.) $Ph_2S{=}C(CH_3)_2$, CH_2Cl_2



12

1.) HF (49%), MeCN, 0°C
2.) O_3, CH_2Cl_2, MeOH, -78°C
$(NH_2)_2C{=}S$

3.) Tf_2O, py, CH_2Cl_2, 0°C
4.) nBu_4NI, MeCN



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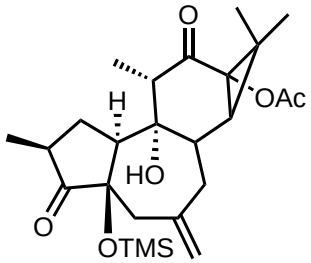
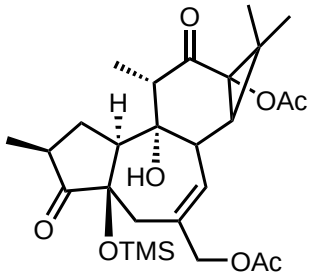
Zn, EtOH, 80°C



14

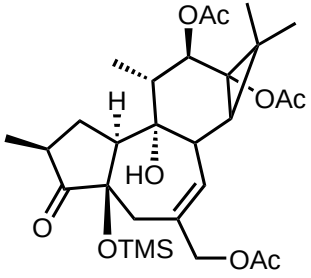
1.) SeO_2, tBuOOH, CH_2Cl_2
2.) $SOCl_2$, py, Et_2O, 0°C

3.) KOAc, 18-crown-6, AgOAc
MeCN



15

1.) $NaBH(OAc)_3$, THF
2.) Ac_2O, DMAP, py
CH_2Cl_2

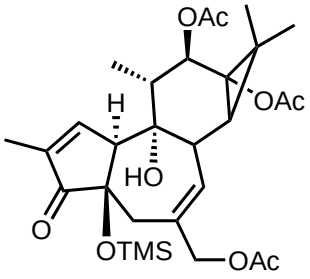


16

1.) MSTFA, DMAP, DABCO
MeCN, 100°C
2.) NBS, THF

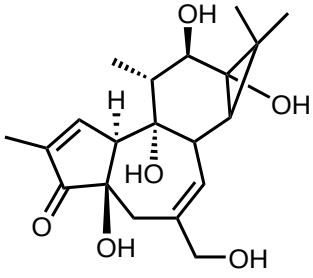
3.) Li_2CO_3, LiBr, DMF, 130°C

MSTFA=N-Methyl-N-trimethylsilyl trifluoroacetamid



17

1.) TBAF, THF, -20°C
2.) $Ba(OH)_2$, MeOH



Phorbol

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Paul A. Wender, JACS, **1997**, 119, 7897-7898