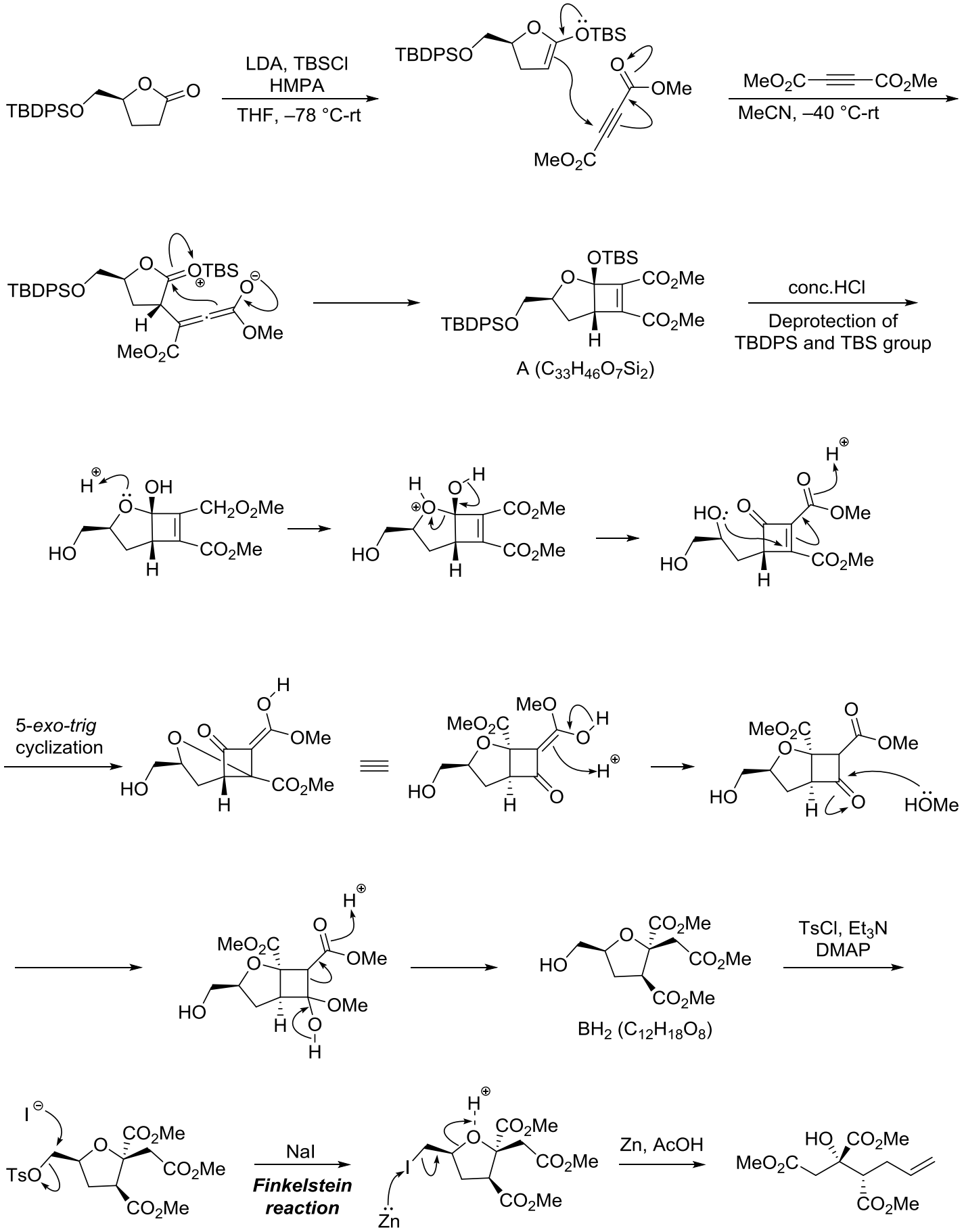
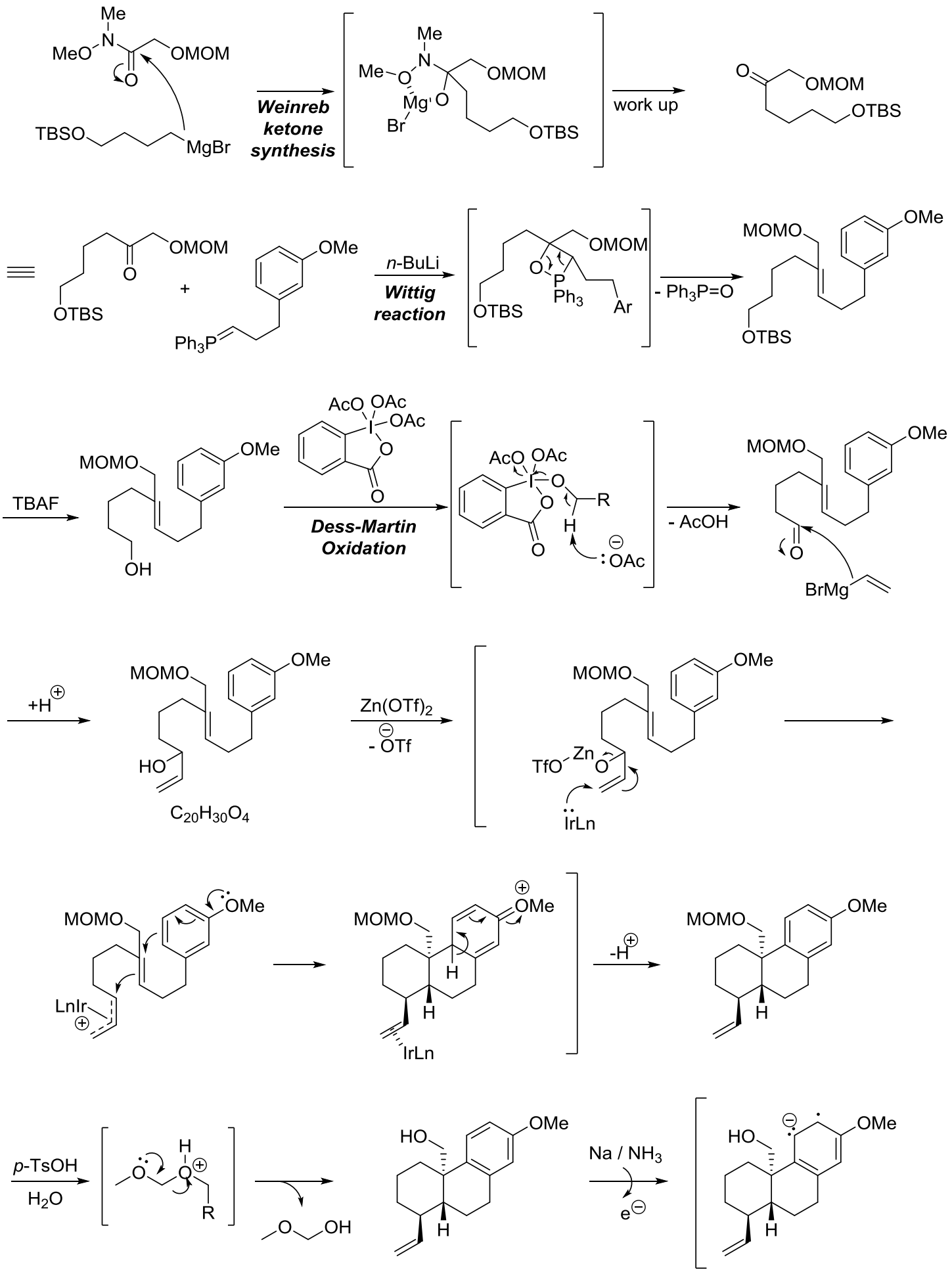
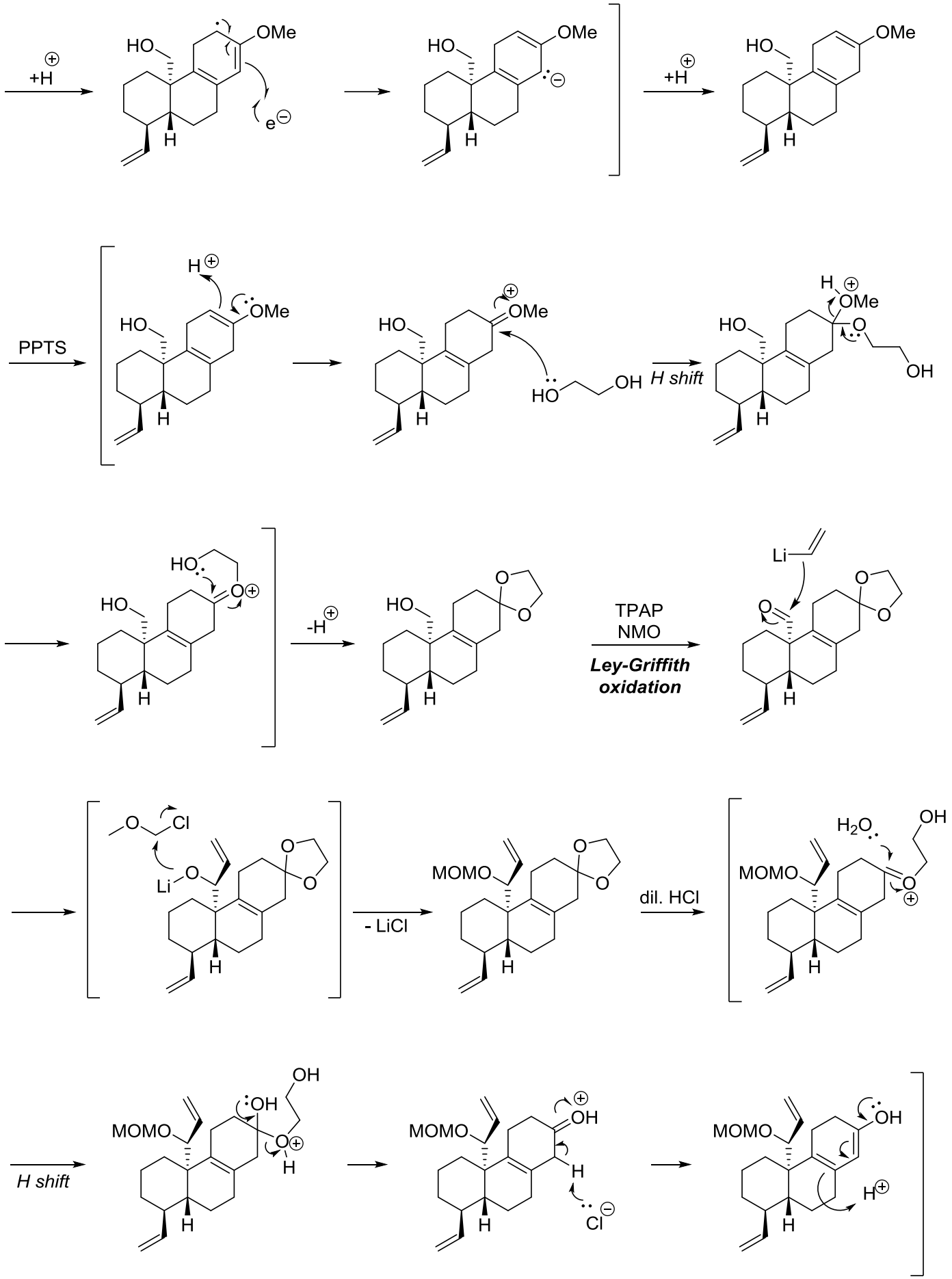
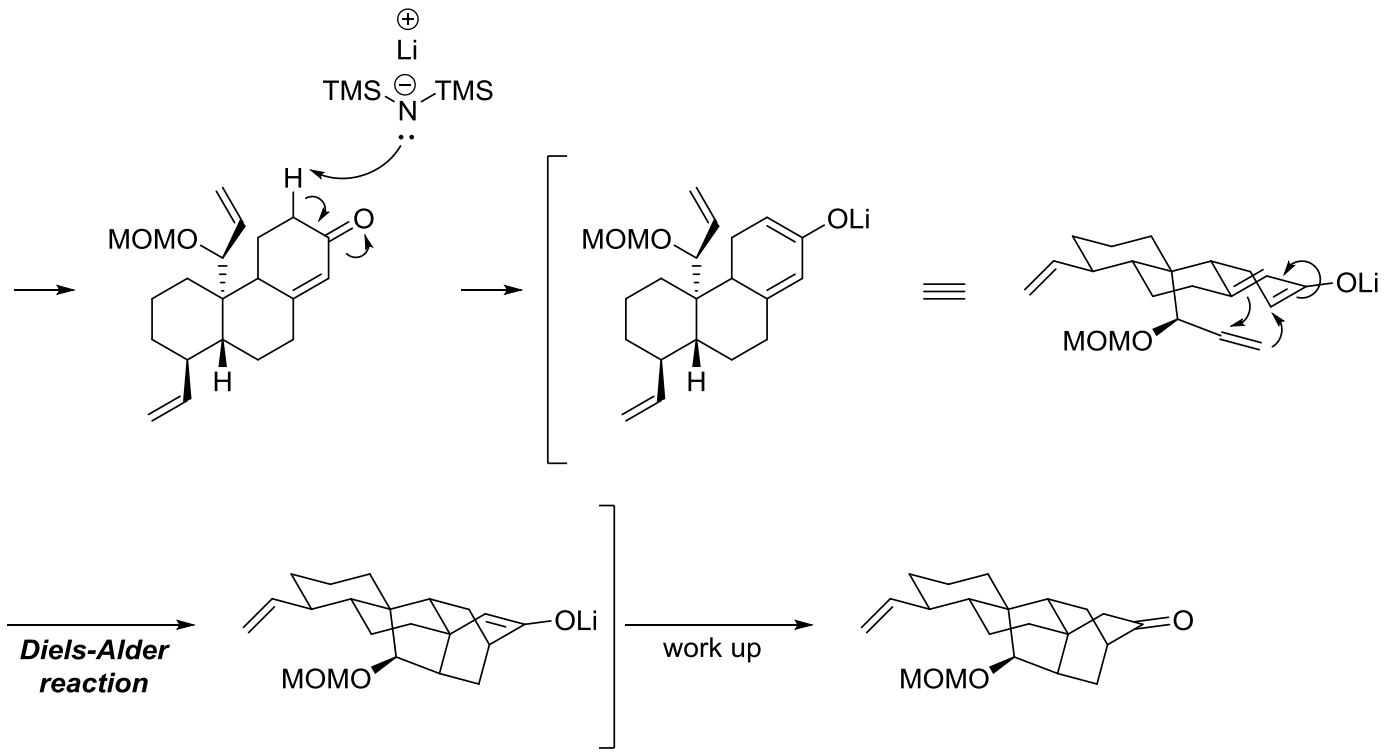

TBDPSO
LDA, TBSCl
HMPA
THF, –78 °C-rt
OTBS
OMe
MeO2C
MeO2C
CO2Me
MeCN, –40 °C-rt
OTBS
H
OMe
MeO2C
CO2Me
CO2Me
A (C33H46O7Si2)
conc.HCl
Deprotection of
TBDPS and TBS group
OH
CH2O2Me
CO2Me
HO
5-exo-trig
cyclization
OMe
CO2Me
MeO
MeO2C
HOMe
OMe
MeO2C
CO2Me
CO2Me
BH2 (C12H18O8)
TsCl, Et3N
DMAP
TsO
CO2Me
NaI
Finkelstein
reaction
Zn
Zn, AcOH
HO
MeO2C
CO2Me
CO2Me


Weinreb ketone synthesis
work up
n-BuLi
Wittig reaction
- Ph3P=O
TBAF
Dess-Martin Oxidation
- AcOH
+H⊕
Zn(OTf)2
- OTf
C20H30O4
-H⊕
p-TsOH
H2O
Na / NH3
e⊖


+H
HO
OMe
e
H
PPTS
H shift
OH
-H
TPAP
NMO
Ley-Griffith oxidation
Li
Cl
MOMO
- LiCl
dil. HCl
H2O
Cl


Li
TMS
N
TMS
H
MOMO
O
H
MOMO
OLi
H
OLi
MOMO
Diels-Alder reaction
OLi
MOMO
work up
O
MOMO