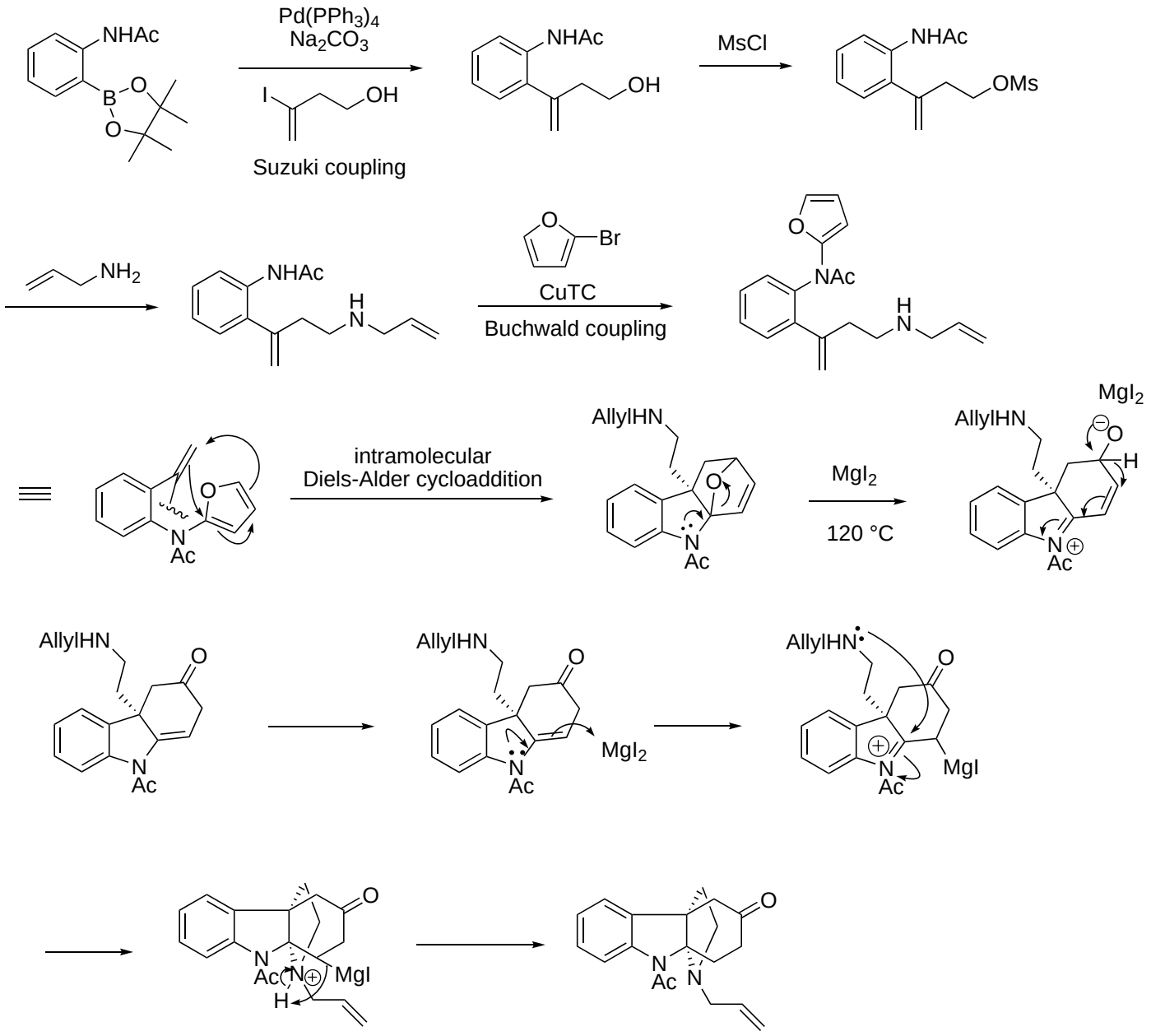
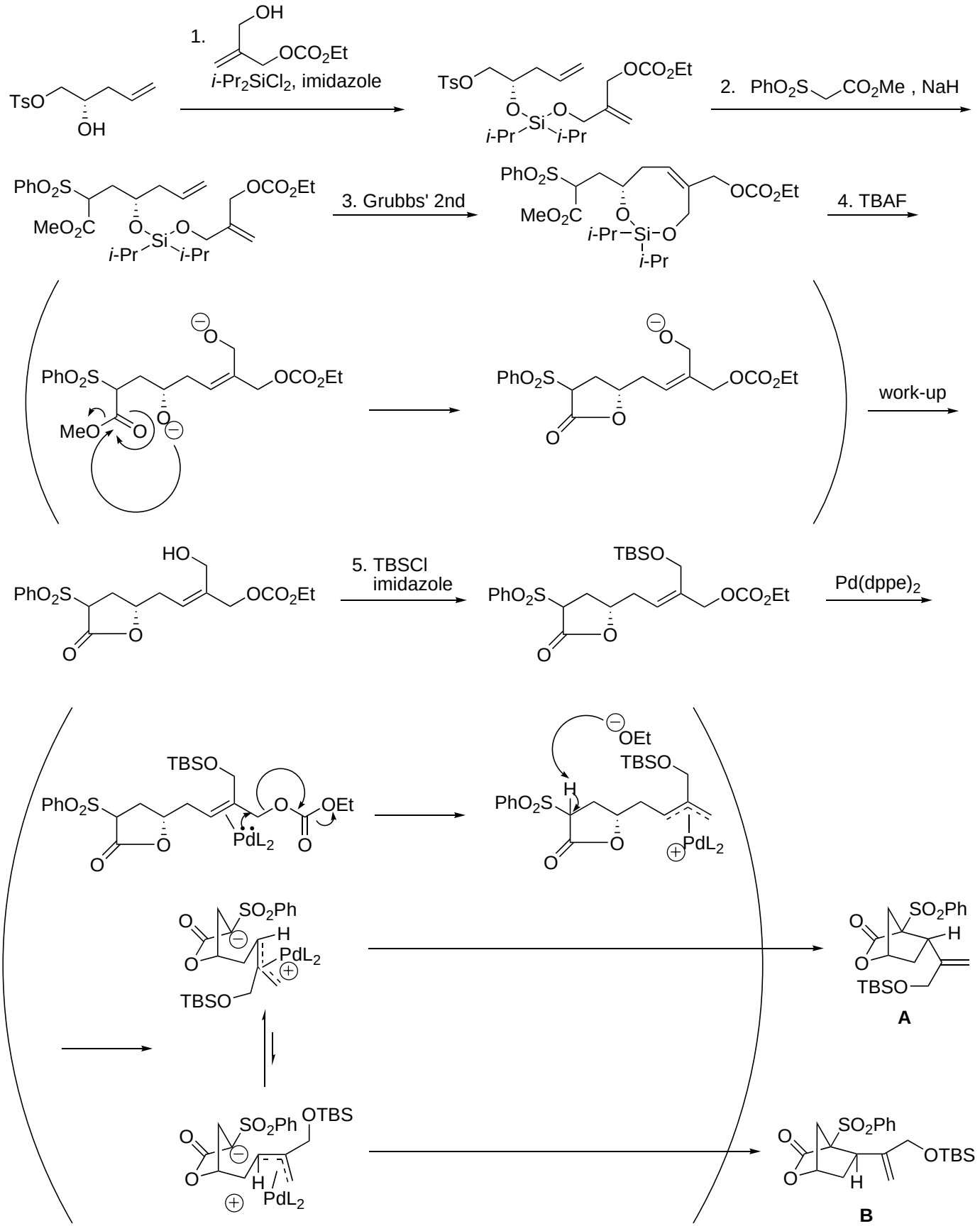
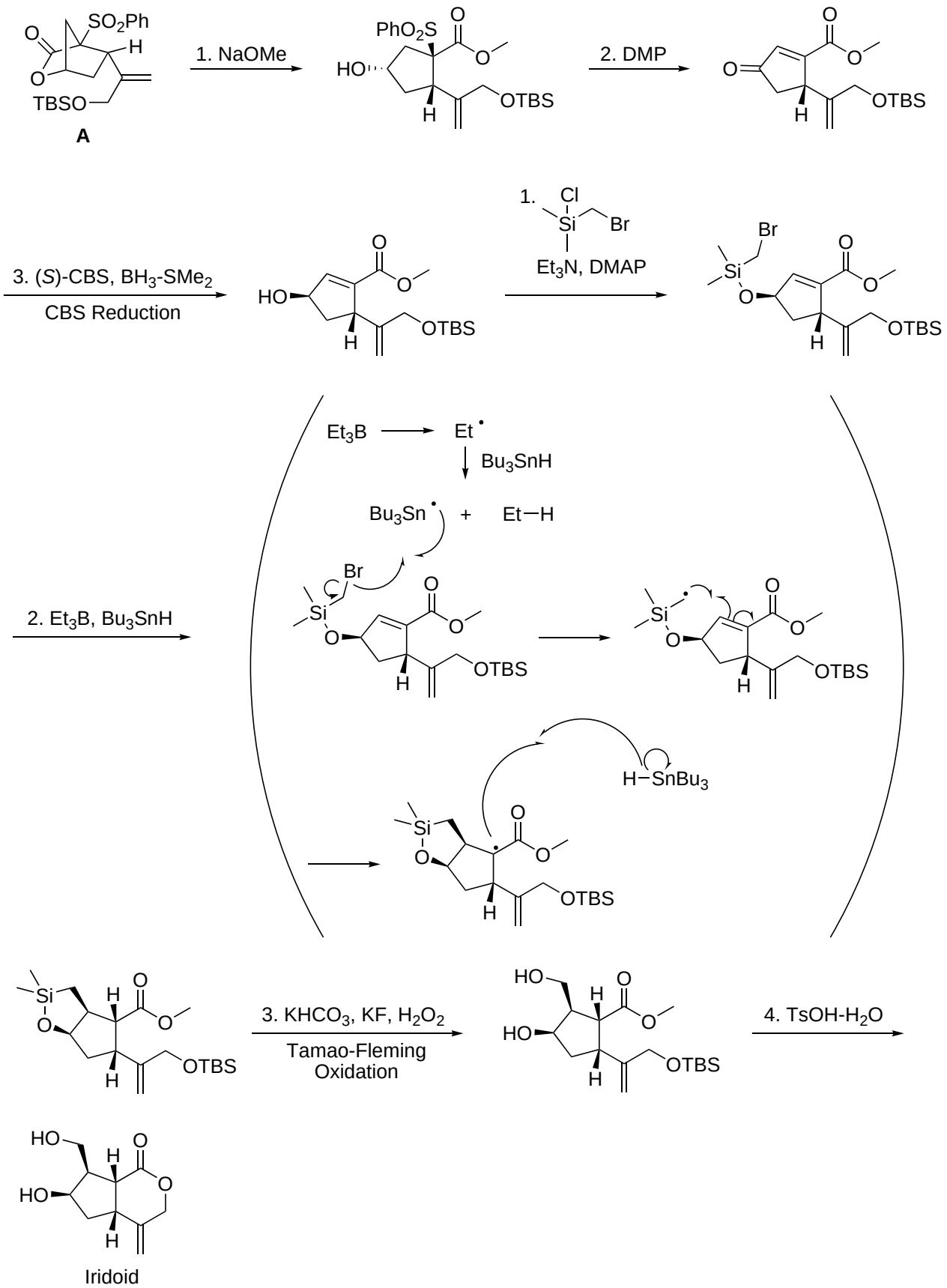

NHAc
B
O
O
Pd(PPh3)4
Na2CO3
I
OH
Suzuki coupling
NHAc
OH
MsCl
NHAc
OMs
NH2
NHAc
H
N
O
Br
CuTC
Buchwald coupling
O
NAc
H
N
O
N
Ac
intramolecular
Diels-Alder cycloaddition
AllylHN
O
N
Ac
MgI2
120 °C
AllylHN
O
H
N
Ac
MgI2
AllylHN
O
N
Ac
AllylHN
O
N
Ac
MgI2
AllylHN
O
N
Ac
MgI
O
N
Ac
N
MgI
H
O
N
Ac
N


1.
OH
OCO2Et
i-Pr2SiCl2, imidazole
TsO
OH
OCO2Et
Si
i-Pr
i-Pr
2. PhO2S CO2Me , NaH
PhO2S
MeO2C
3. Grubbs' 2nd
4. TBAF
MeO
work-up
HO
5. TBSCl
imidazole
TBSO
Pd(dppe)2
OEt
PdL2
SO2Ph
H
OTBS
A
B


SO2Ph
H
O
O
TBSO
A
1. NaOMe
PhO2S
O
HO
O
H
OTBS
2. DMP
O
O
O
H
OTBS
3. (S)-CBS, BH3-SMe2
CBS Reduction
HO
O
O
H
OTBS
1.
Cl
Si
Br
Et3N, DMAP
Br
Si
O
O
O
H
OTBS
2. Et3B, Bu3SnH
Et3B
Et•
Bu3SnH
Bu3Sn•
+
Et—H
Br
Si
O
O
O
H
OTBS
Si•
O
O
O
H
OTBS
H—SnBu3
Si
O
O
O
H
OTBS
Si
O
H
O
O
H
OTBS
3. KHCO3, KF, H2O2
Tamao-Fleming
Oxidation
HO
H
O
HO
O
H
OTBS
4. TsOH-H2O
HO
H
O
HO
O
H
Iridoid