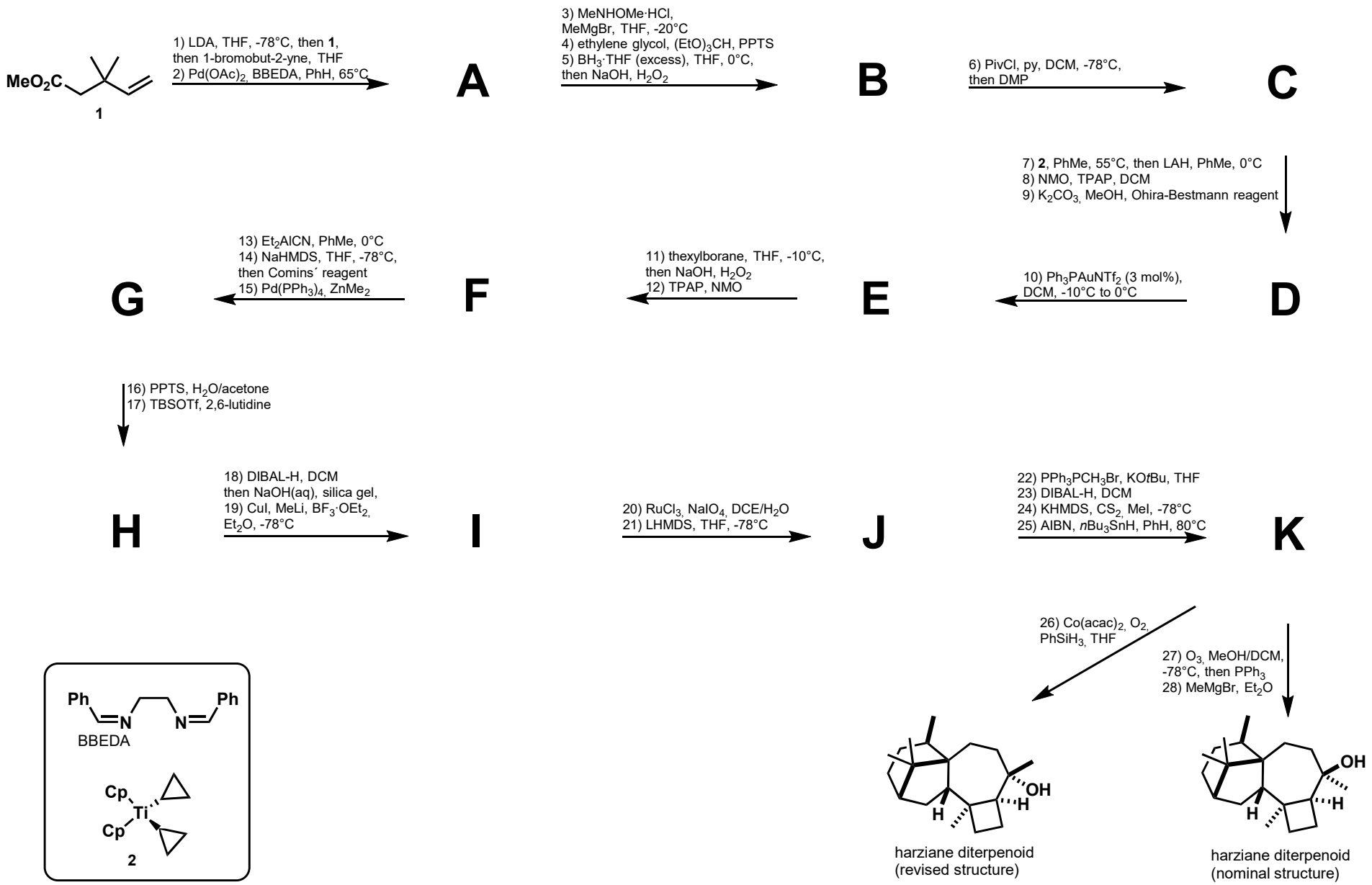
Denksport


MeO2C
1
1) LDA, THF, -78°C, then 1,
then 1-bromobut-2-yne, THF
2) Pd(OAc)2, BBEDA, PhH, 65°C
A
3) MeNHOMe·HCl,
MeMgBr, THF, -20°C
4) ethylene glycol, (EtO)3CH, PPTS
5) BH3·THF (excess), THF, 0°C,
then NaOH, H2O2
B
6) PivCl, py, DCM, -78°C,
then DMP
C
7) 2, PhMe, 55°C, then LAH, PhMe, 0°C
8) NMO, TPAP, DCM
9) K2CO3, MeOH, Ohira-Bestmann reagent
D
10) Ph3PAuNTf2 (3 mol%),
DCM, -10°C to 0°C
E
11) thexylborane, THF, -10°C,
then NaOH, H2O2
12) TPAP, NMO
F
13) Et2AlCN, PhMe, 0°C
14) NaHMDS, THF, -78°C,
then Comins´ reagent
15) Pd(PPh3)4, ZnMe2
G
16) PPTS, H2O/acetone
17) TBSOTf, 2,6-lutidine
H
18) DIBAL-H, DCM
then NaOH(aq), silica gel,
19) CuI, MeLi, BF3·OEt2,
Et2O, -78°C
I
20) RuCl3, NaIO4, DCE/H2O
21) LHMDS, THF, -78°C
J
22) PPh3PCH3Br, KOtBu, THF
23) DIBAL-H, DCM
24) KHMDS, CS2, MeI, -78°C
25) AIBN, nBu3SnH, PhH, 80°C
K
26) Co(acac)2, O2,
PhSiH3, THF
27) O3, MeOH/DCM,
-78°C, then PPh3
28) MeMgBr, Et2O
Ph
N
N
Ph
BBEDA
Cp
Ti
Cp
2
OH
H
H
harziane diterpenoid
(revised structure)
OH
H
H
harziane diterpenoid
(nominal structure)