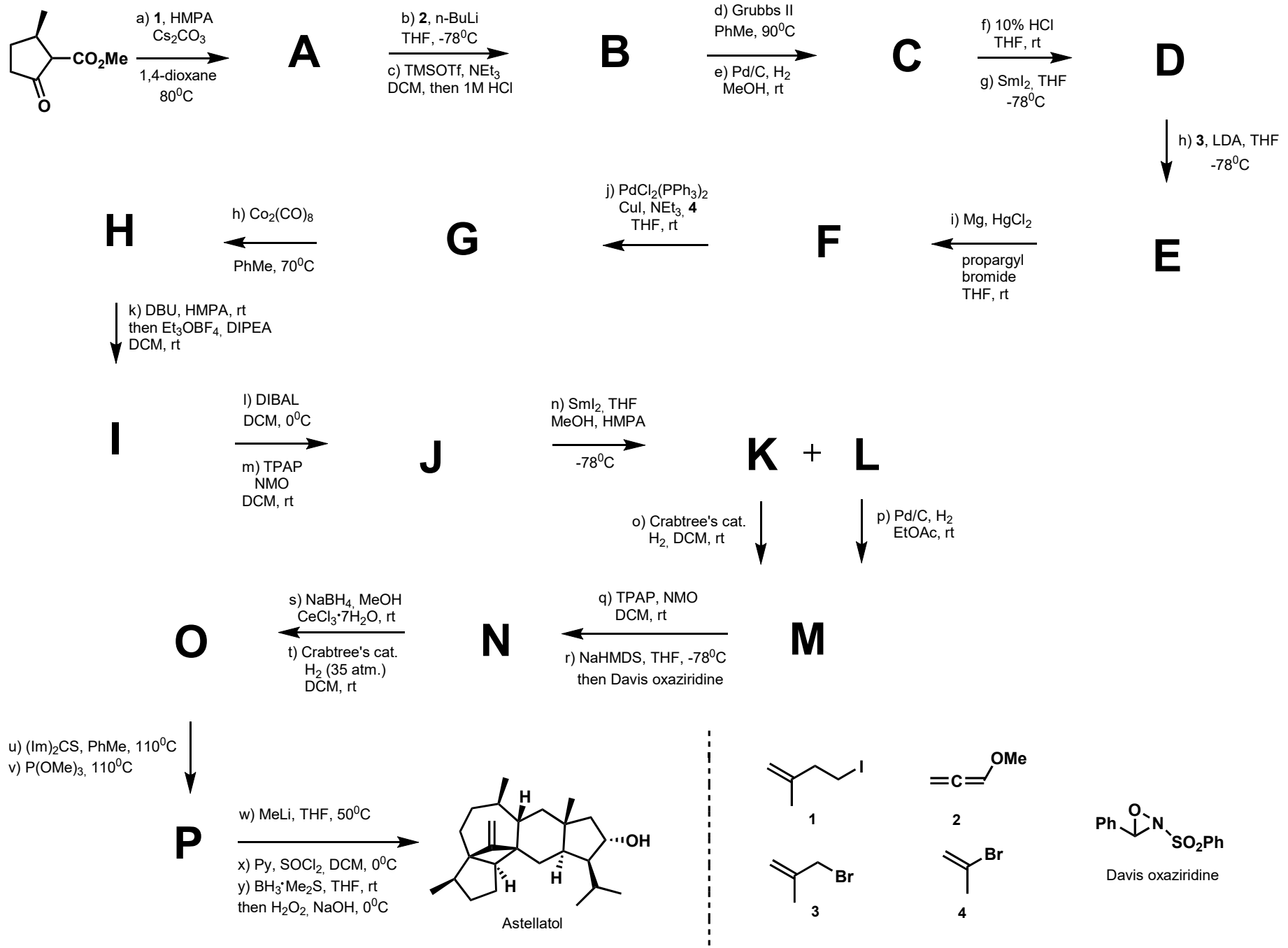
CO2Me
O
a) 1, HMPA
Cs2CO3
1,4-dioxane
80⁰C
A
b) 2, n-BuLi
THF, -78⁰C
c) TMSOTf, NEt3
DCM, then 1M HCl
B
d) Grubbs II
PhMe, 90⁰C
e) Pd/C, H2
MeOH, rt
C
f) 10% HCl
THF, rt
g) SmI2, THF
-78⁰C
D
h) 3, LDA, THF
-78⁰C
E
i) Mg, HgCl2
propargyl
bromide
THF, rt
F
j) PdCl2(PPh3)2
CuI, NEt3, 4
THF, rt
G
h) Co2(CO)8
PhMe, 70⁰C
H
k) DBU, HMPA, rt
then Et3OBF4, DIPEA
DCM, rt
I
l) DIBAL
DCM, 0⁰C
m) TPAP
NMO
DCM, rt
J
n) SmI2, THF
MeOH, HMPA
-78⁰C
K + L
o) Crabtree's cat.
H2, DCM, rt
p) Pd/C, H2
EtOAc, rt
M
q) TPAP, NMO
DCM, rt
r) NaHMDS, THF, -78⁰C
then Davis oxaziridine
N
s) NaBH4, MeOH
CeCl3·7H2O, rt
t) Crabtree's cat.
H2 (35 atm.)
DCM, rt
O
u) (Im)2CS, PhMe, 110⁰C
v) P(OMe)3, 110⁰C
P
w) MeLi, THF, 50⁰C
x) Py, SOCl2, DCM, 0⁰C
y) BH3·Me2S, THF, rt
then H2O2, NaOH, 0⁰C
H
OH
Astellatol
I
1
OMe
C
2
Br
3
Br
4
Ph
O
N
SO2Ph
Davis oxaziridine