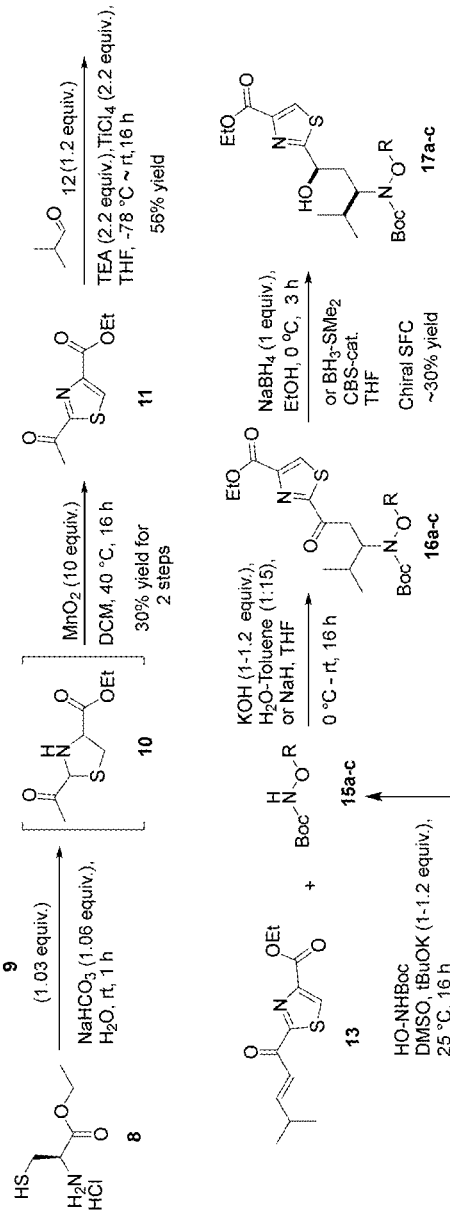
FIG. 2


9
(1.03 equiv.)
NaHCO3 (1.06 equiv.),
H2O, rt, 1 h
8
10
MnO2 (10 equiv.)
DCM, 40 °C, 16 h
30% yield for
2 steps
11
12 (1.2 equiv.)
TEA (2.2 equiv.), TiCl4 (2.2 equiv.),
THF, -78 °C ~ rt, 16 h
56% yield
13
HO-NHBoc
DMSO, tBuOK (1-1.2 equiv.),
25 °C, 16 h
or DBU, CH2Cl2
or DBU, CH3CN
15a-c
KOH (1-1.2 equiv.),
H2O-Toluene (1:15),
or NaH, THF
0 °C - rt, 16 h
16a-c
NaBH4 (1 equiv.),
EtOH, 0 °C, 3 h
or BH3-SMe2
CBS-cat.
THF
Chiral SFC
~30% yield
17a-c
R-X
14a-c
a: R = nC6H13, X = Br
b: R = (CH2)3OPNP, X = OMs
c: R = (CH2)3C=CH, X = Cl