FIG. 1

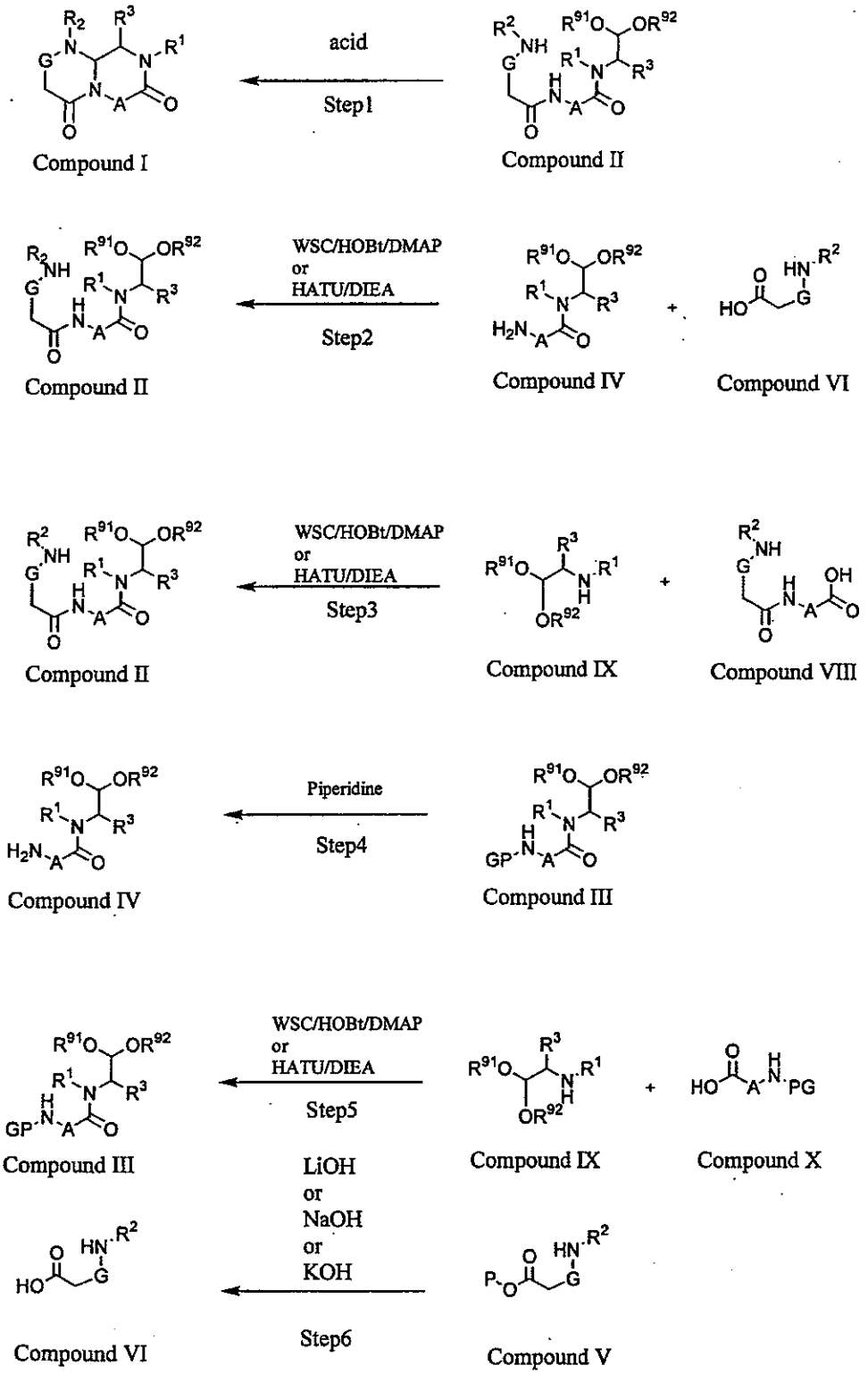

acid
Step1
Compound I
Compound II
WSC/HOBt/DMAP
or
HATU/DIEA
Step2
Compound II
Compound IV
Compound VI
WSC/HOBt/DMAP
or
HATU/DIEA
Step3
Compound II
Compound IX
Compound VIII
Piperidine
Step4
Compound IV
Compound III
WSC/HOBt/DMAP
or
HATU/DIEA
Step5
Compound III
Compound IX
Compound X
LiOH
or
NaOH
or
KOH
Step6
Compound VI
Compound V

FIG. 2

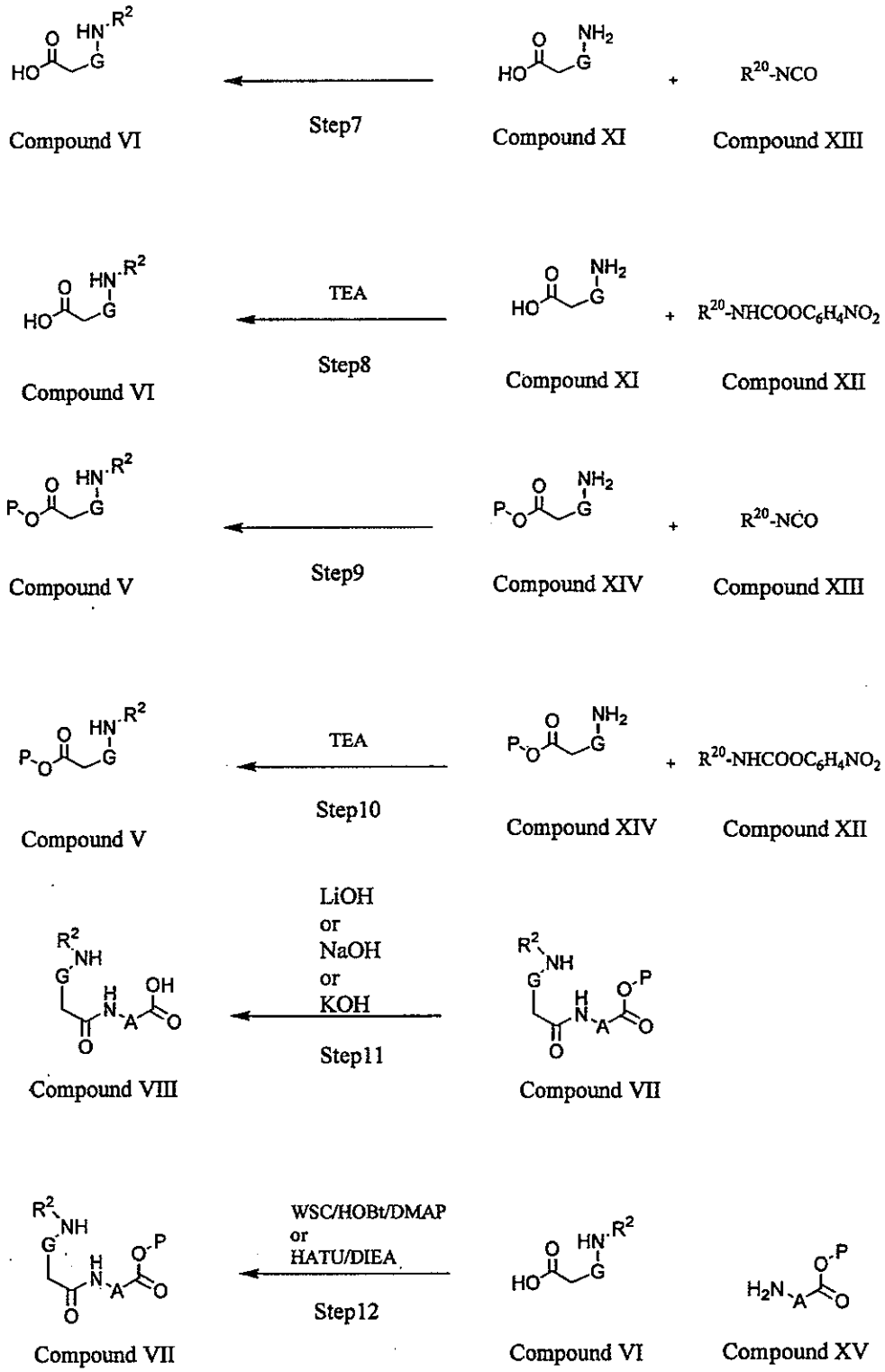
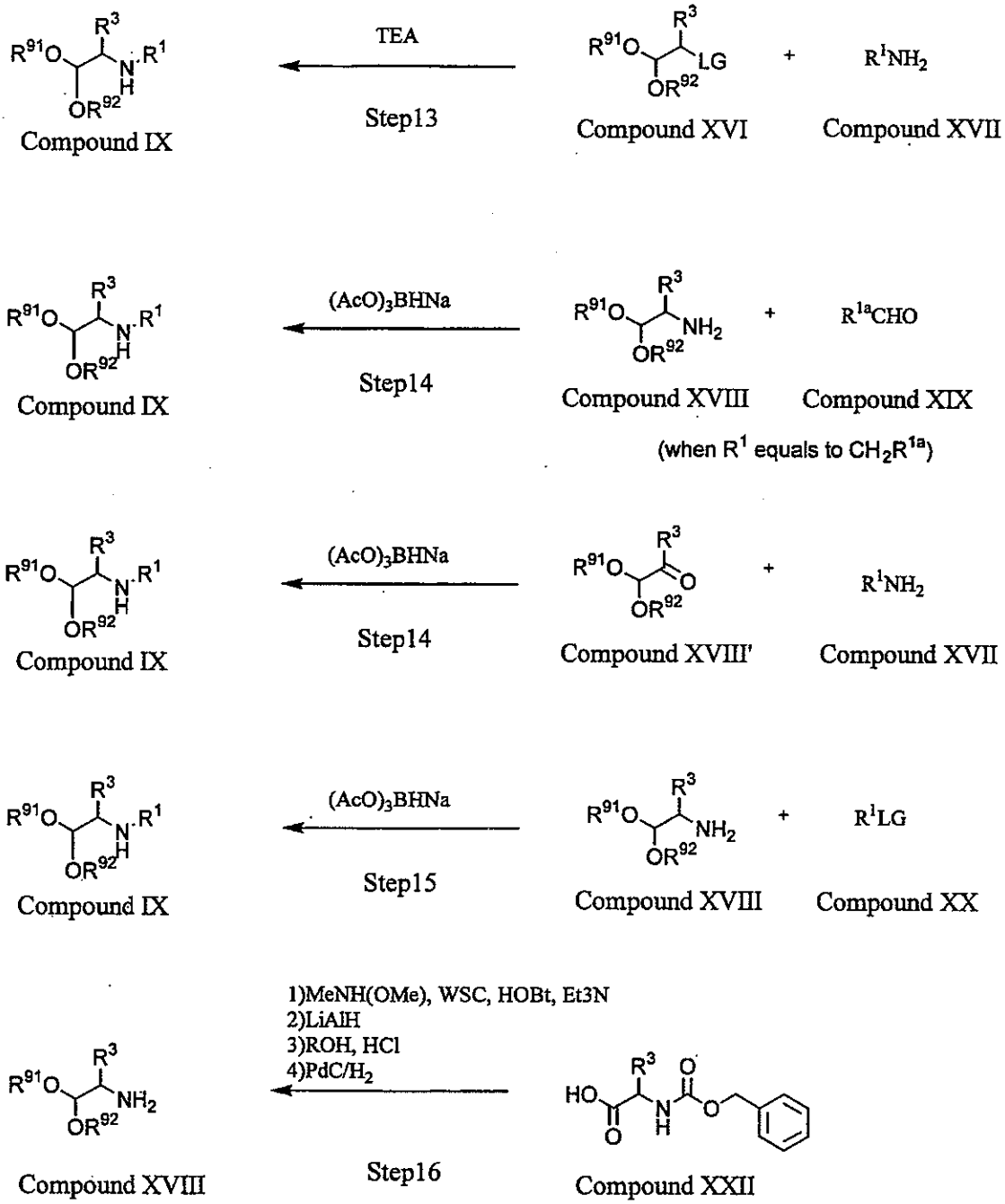

Compound VI
Step7
Compound XI
R^{20}-NCO
Compound XIII
Compound VI
TEA
Step8
Compound XI
R^{20}-NHCOOC$_6$H$_4$NO$_2$
Compound XII
Compound V
Step9
Compound XIV
R^{20}-NCO
Compound XIII
Compound V
TEA
Step10
Compound XIV
R^{20}-NHCOOC$_6$H$_4$NO$_2$
Compound XII
LiOH
or
NaOH
or
KOH
Step11
Compound VIII
Compound VII
WSC/HOBt/DMAP
or
HATU/DIEA
Step12
Compound VII
Compound VI
Compound XV

FIG. 3


TEA
Step13
Compound IX
Compound XVI
Compound XVII
(AcO)3BHNa
Step14
Compound XVIII
Compound XIX
(when R1 equals to CH2R1a)
Compound XVIII'
Step15
Compound XX
1)MeNH(OMe), WSC, HOBt, Et3N
2)LiAlH
3)ROH, HCl
4)PdC/H2
Step16
Compound XXII