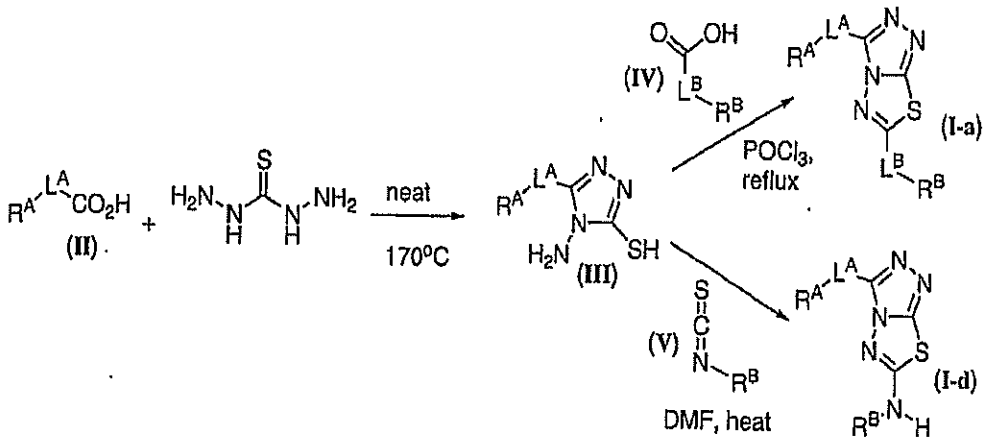


FIGURE 1

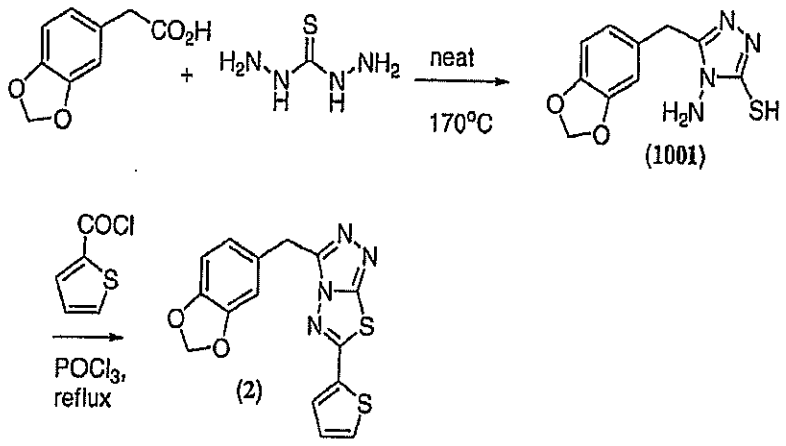


FIGURE 2

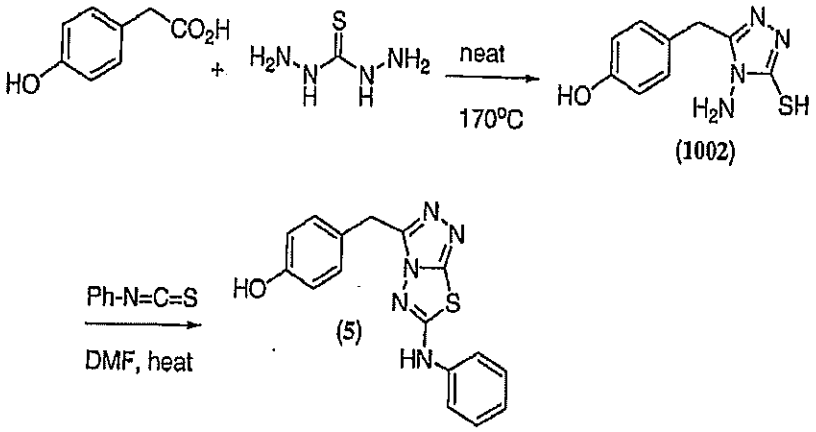

CO2H
HO
+
H2N
S
NH2
neat
170°C
HO
N
N
N
H2N
SH
(1002)
Ph-N=C=S
DMF, heat
HO
(5)
HN

FIGURE 3

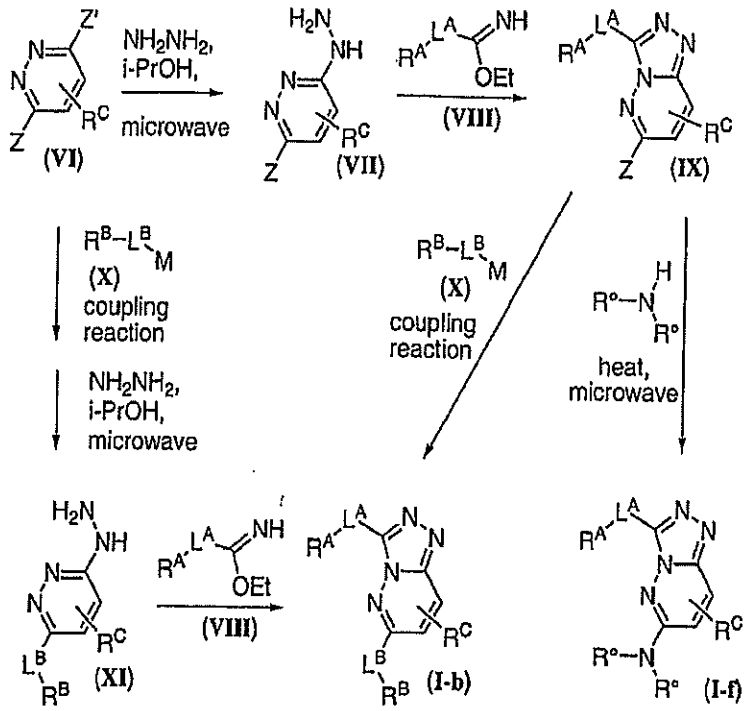

NH2NH2,
i-PrOH,
microwave
(VI)
(VII)
(VIII)
(IX)
(X)
coupling
reaction
NH2NH2,
i-PrOH,
microwave
heat,
microwave
(XI)
(I-b)
(I-f)

FIGURE 4

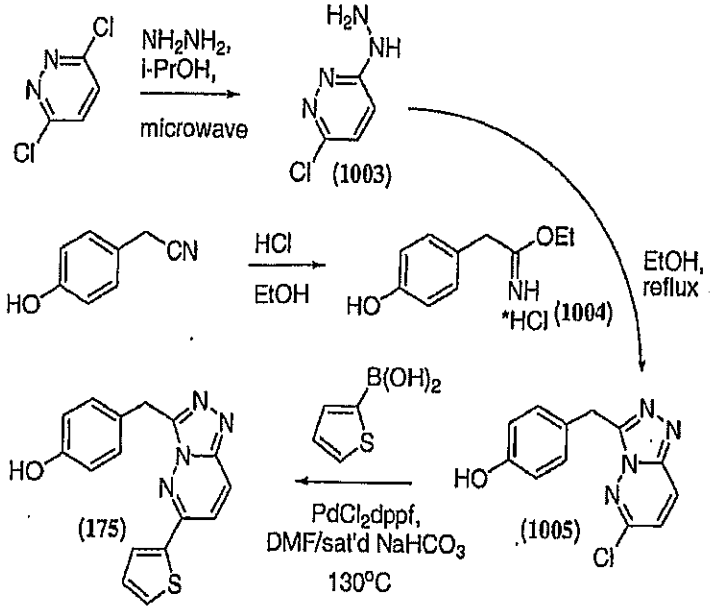

NH2NH2,
i-PrOH,
microwave
(1003)
HCl
EtOH
(1004)
EtOH,
reflux
B(OH)2
PdCl2dppf,
DMF/sat'd NaHCO3
130°C
(175)
(1005)

FIGURE 5

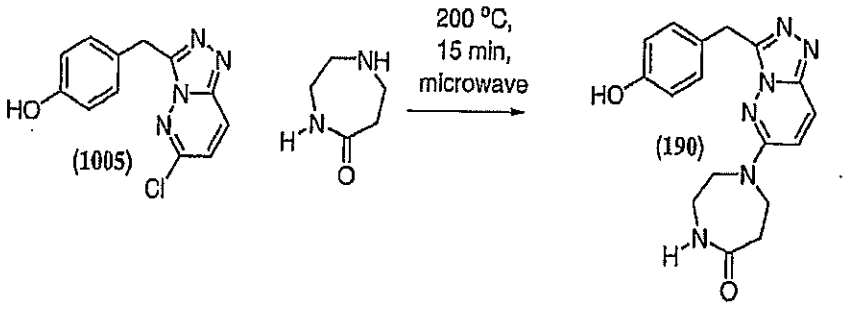


FIGURE 6

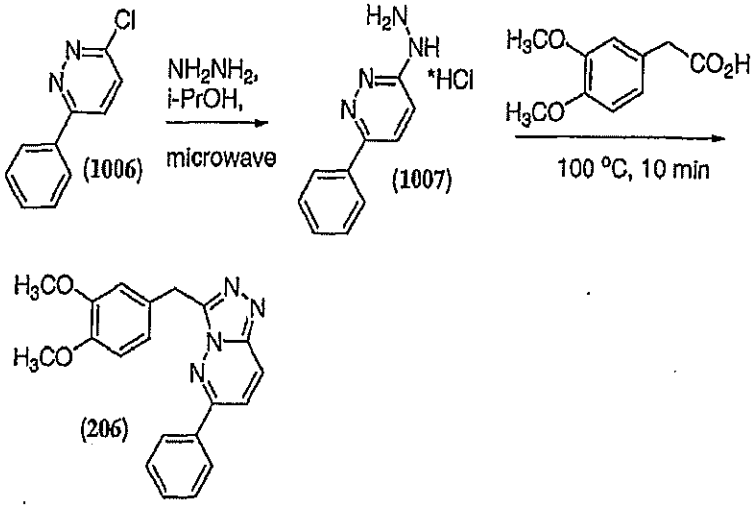

Cl
N
N
(1006)
NH2NH2,
i-PrOH,
microwave
H2N
NH
N
N
*HCl
(1007)
H3CO
H3CO
CO2H
100 °C, 10 min
H3CO
H3CO
N
N
N
N
(206)

FIGURE 7

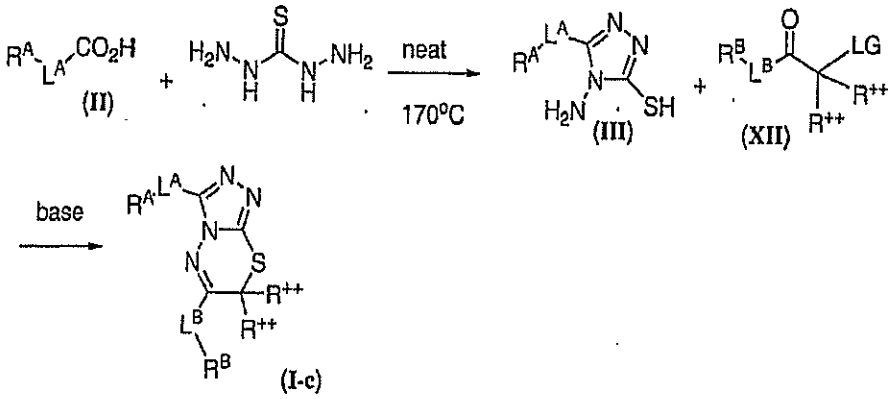


FIGURE 8

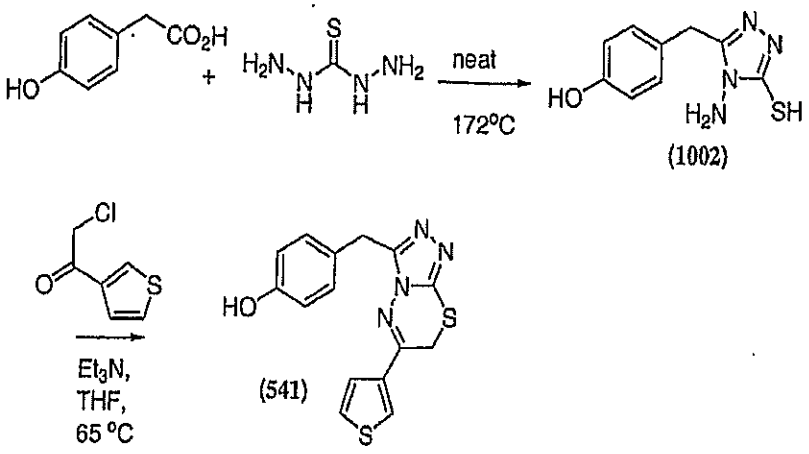

CO2H
HO
+
H2N
NH2
S
neat
172°C
HO
N
N
N
H2N
SH
(1002)
Cl
O
S
Et3N,
THF,
65 °C
HO
N
N
N
S
(541)
S

FIGURE 9