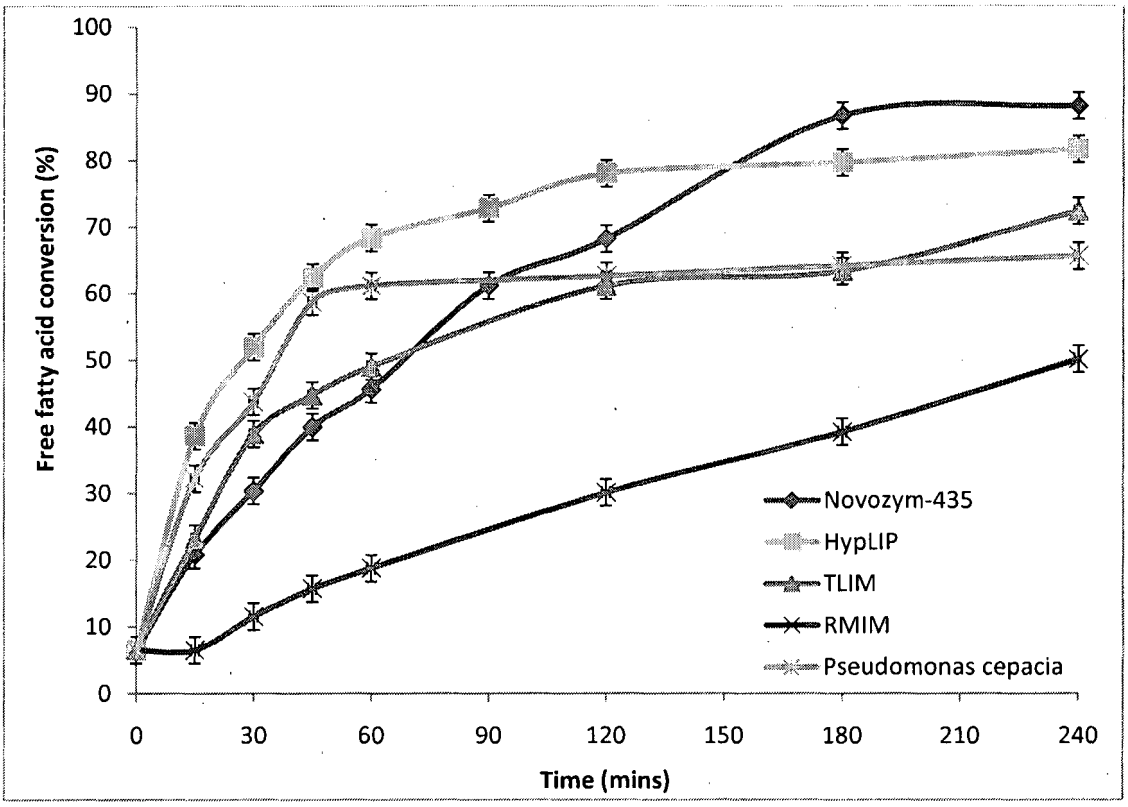

Free fatty acid conversion (%)
100
90
80
70
60
50
40
30
20
10
0
0
30
60
90
120
150
180
210
240
Time (mins)
Novozym-435
HypLIP
TLIM
RMIM
Pseudomonas cepacia

FIGURE 1

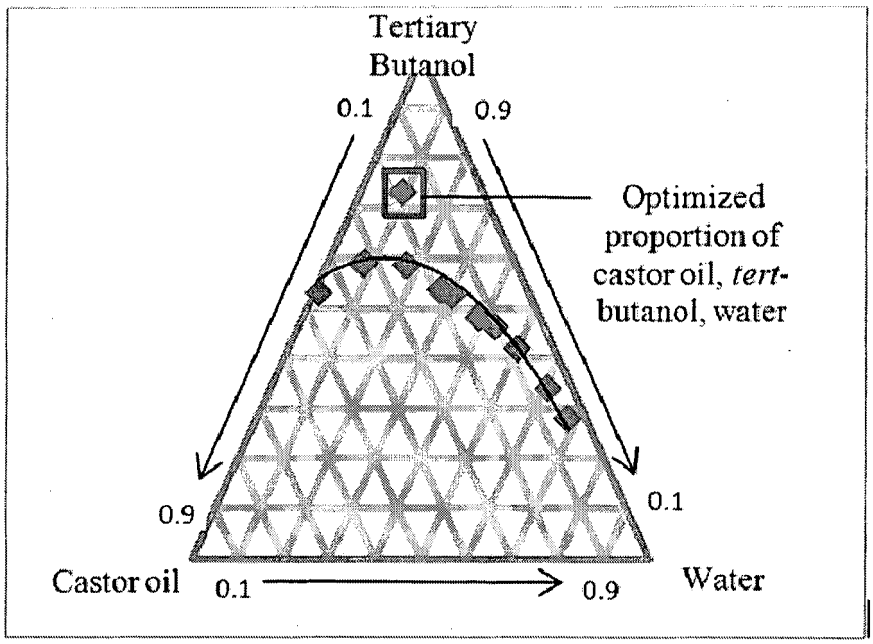


FIGURE 2

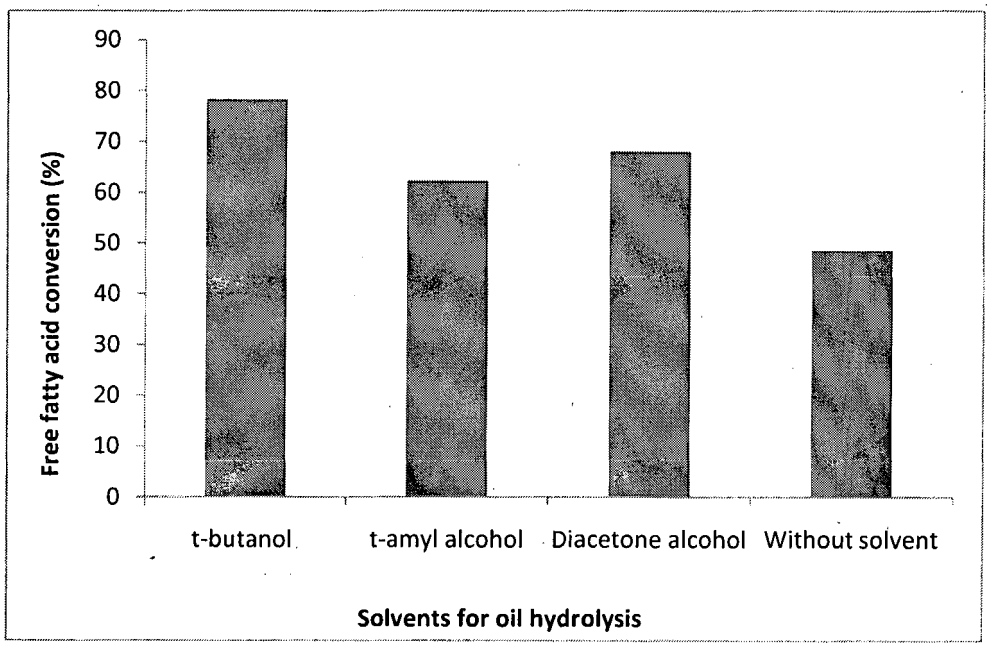


FIGURE 3

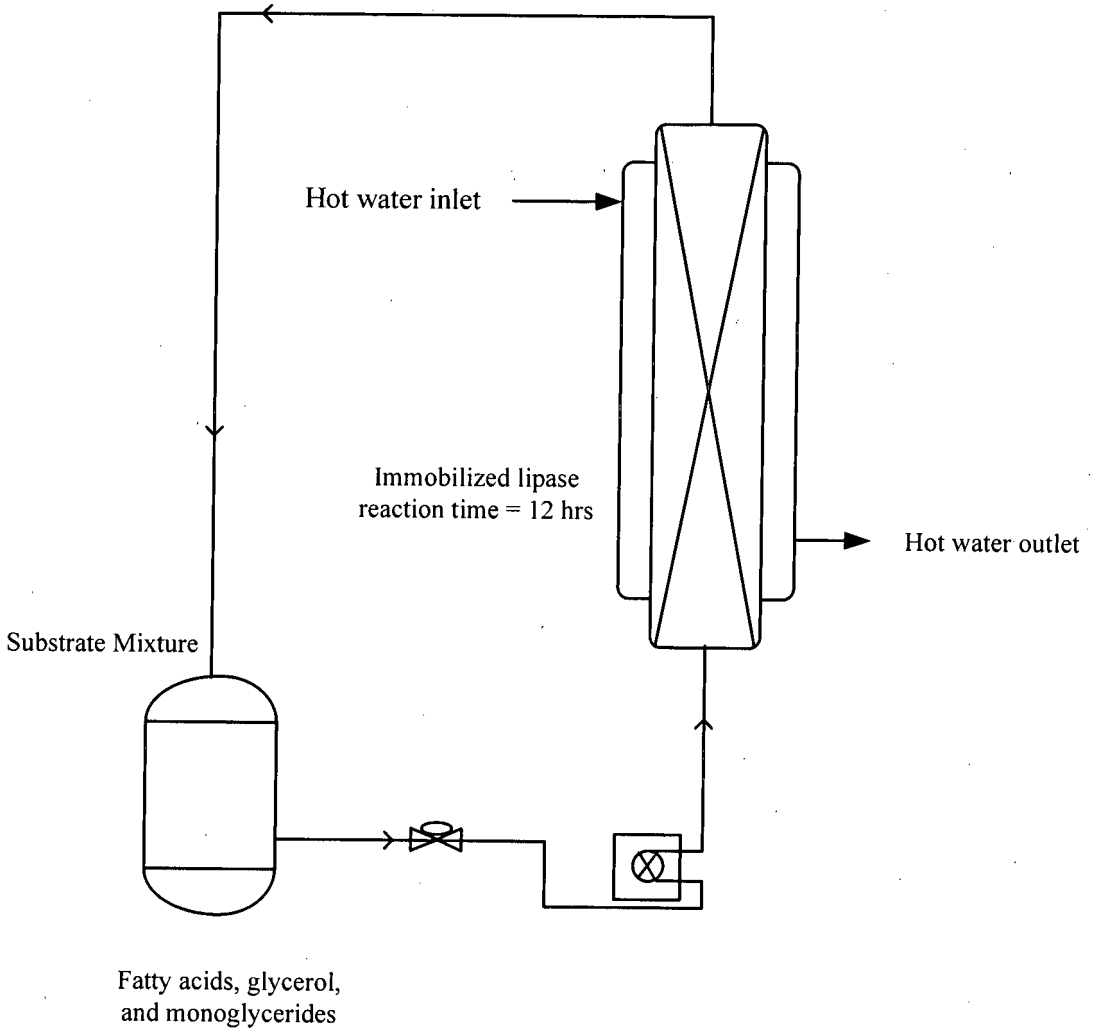

Hot water inlet
Immobilized lipase
reaction time = 12 hrs
Hot water outlet
Substrate Mixture
Fatty acids, glycerol,
and monoglycerides

FIGURE 4

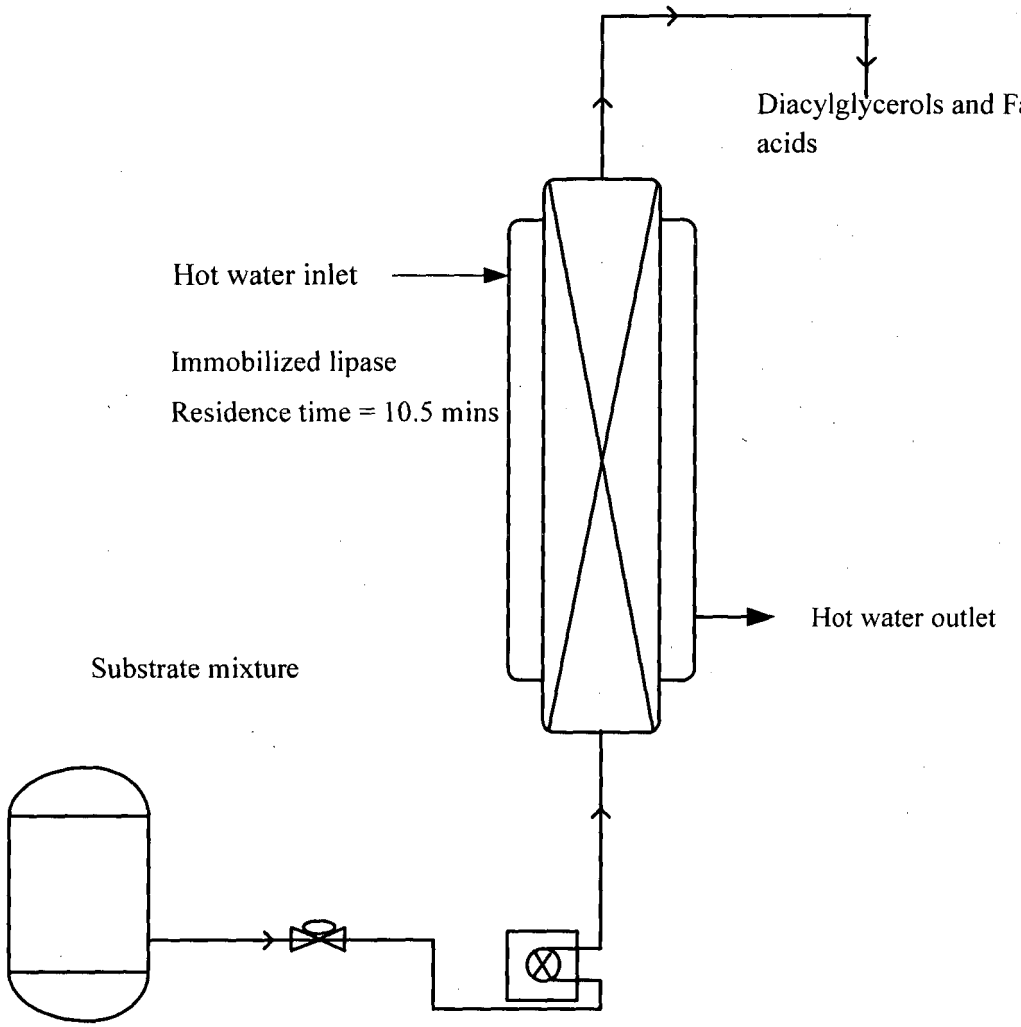

Diacylglycerols and Fatty acids
Hot water inlet
Immobilized lipase
Residence time = 10.5 mins
Hot water outlet
Substrate mixture

FIGURE 5

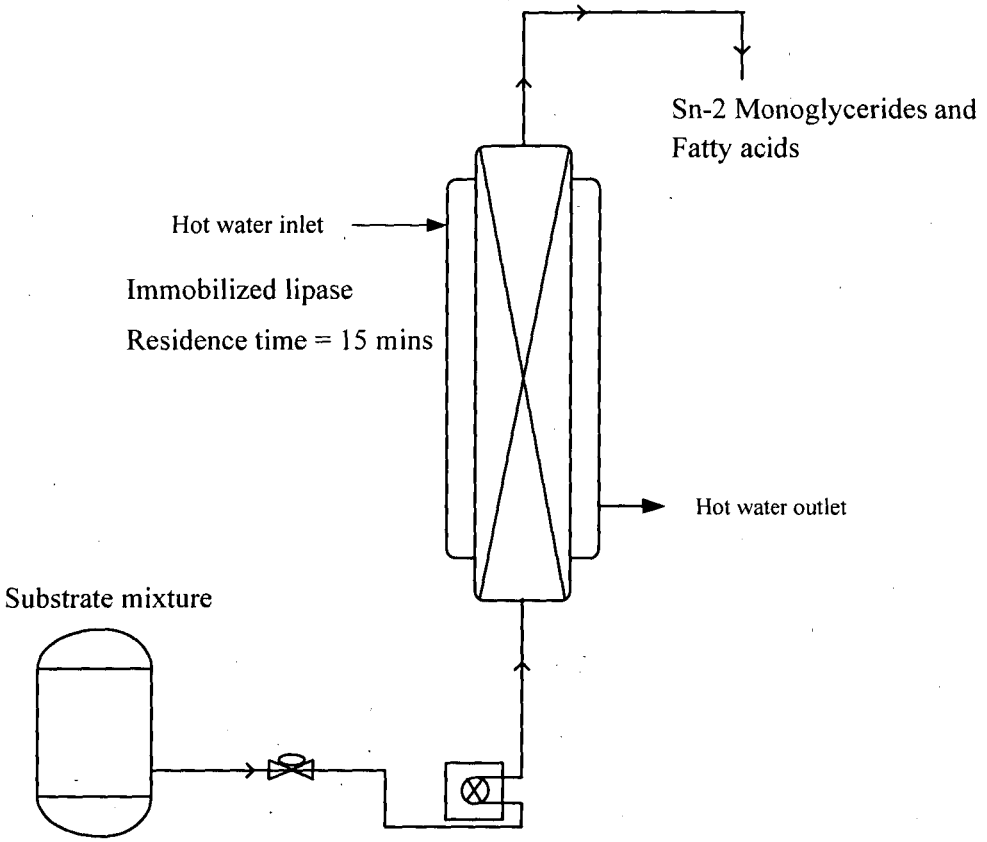


FIGURE 6

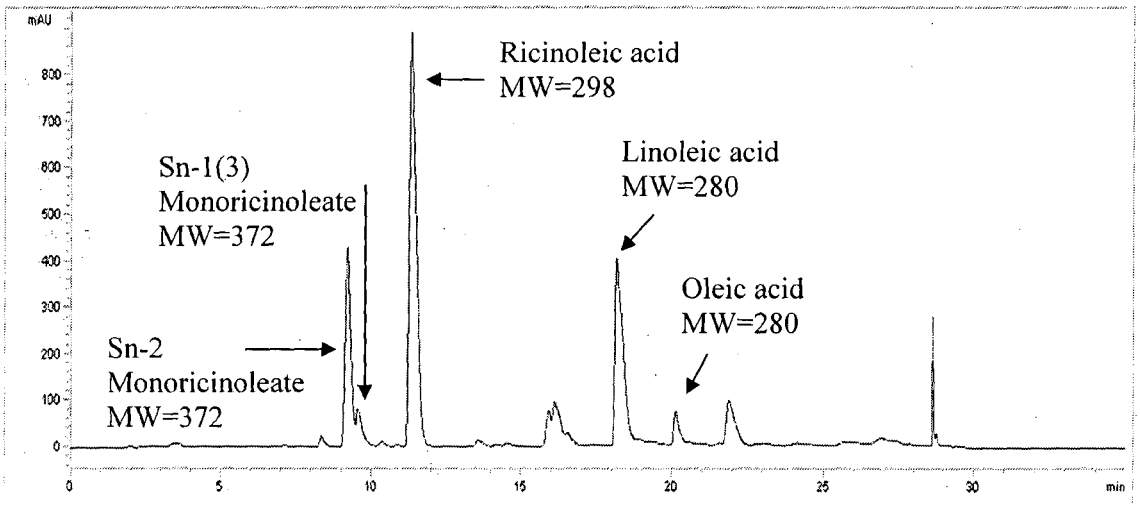


FIGURE 7

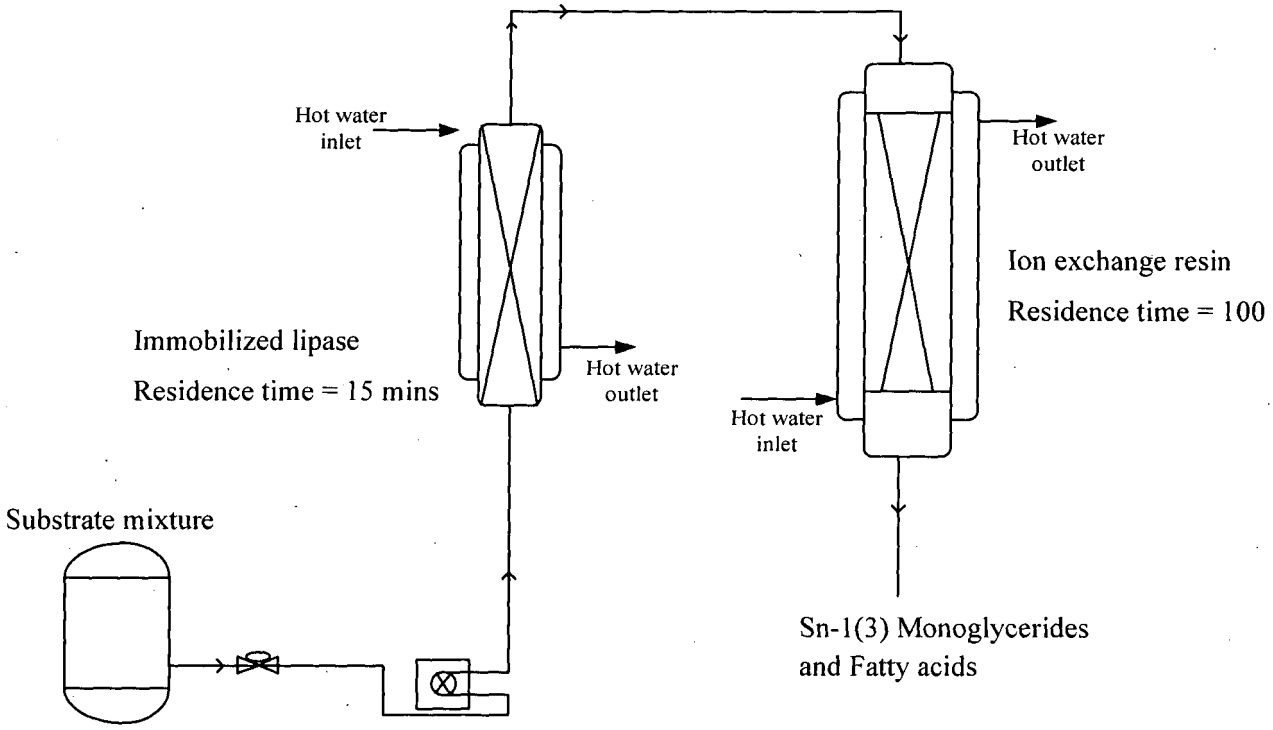


FIGURE 8

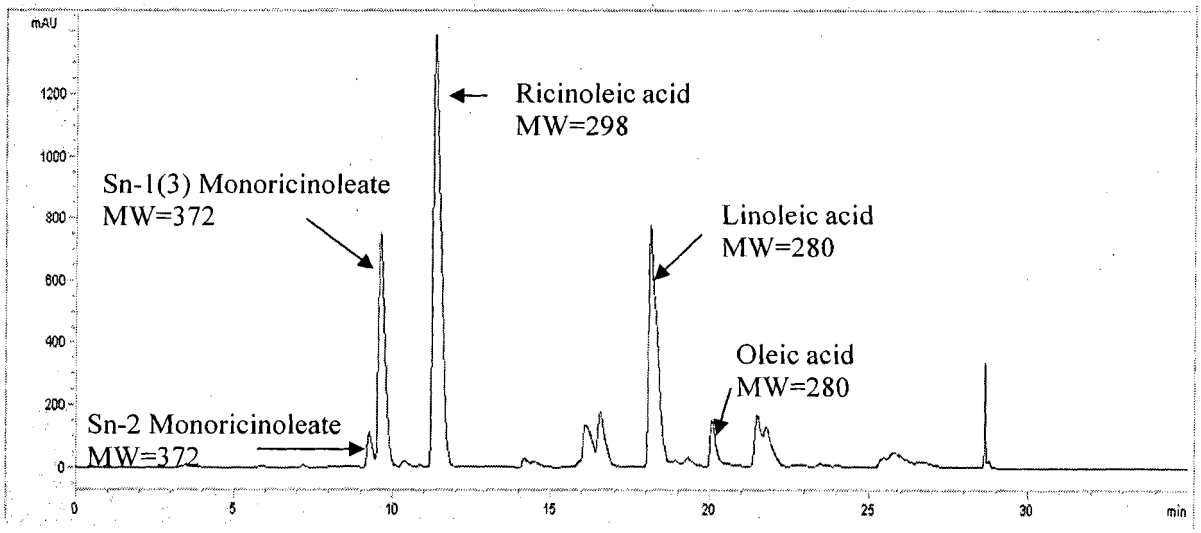


FIGURE 9

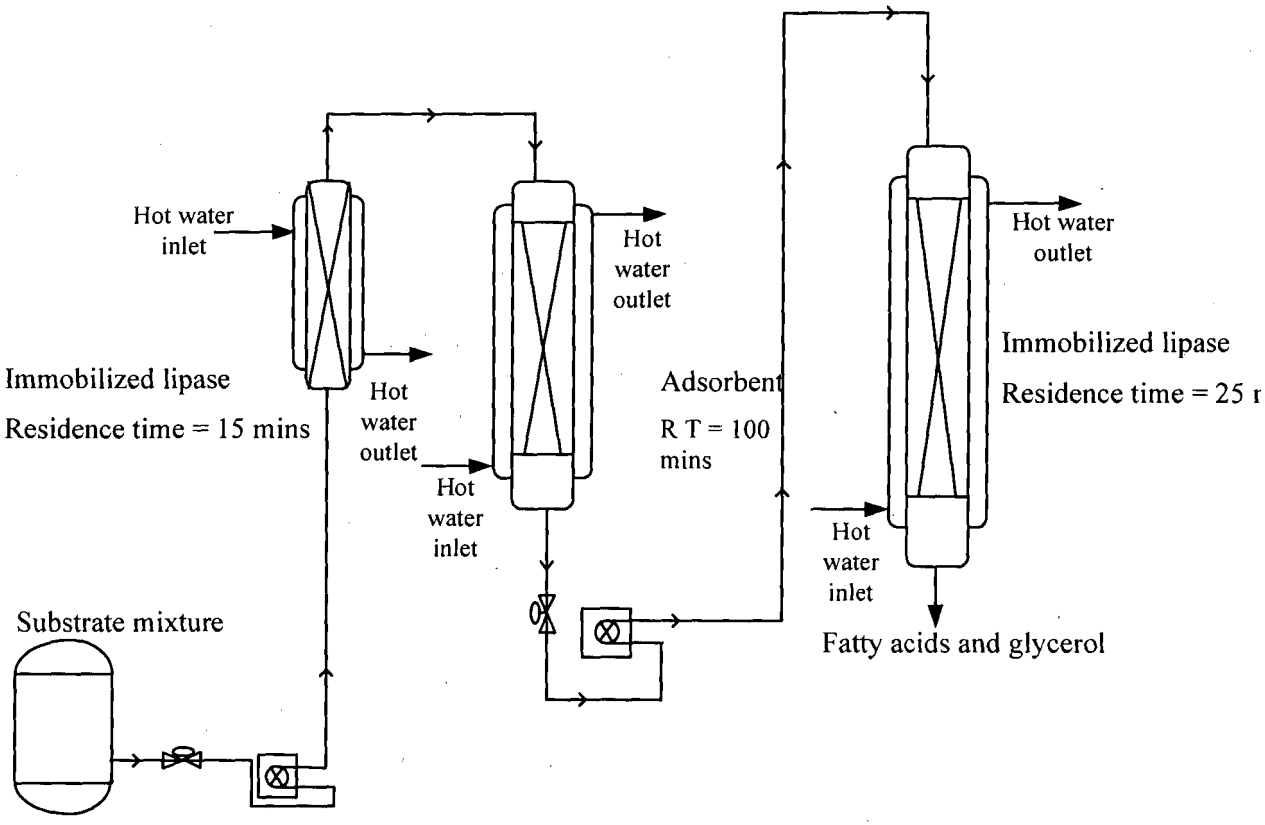

Hot water inlet
Immobilized lipase
Residence time = 15 mins
Hot water outlet
Hot water inlet
Hot water outlet
Substrate mixture
Adsorbent
R T = 100 mins
Hot water inlet
Hot water outlet
Immobilized lipase
Residence time = 25 r
Fatty acids and glycerol

FIGURE 10