FIGURE 1

1 2 3 4

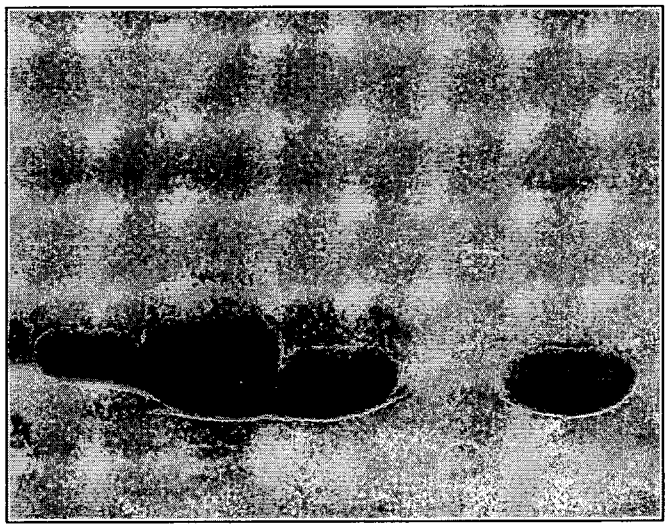


FIGURE 2

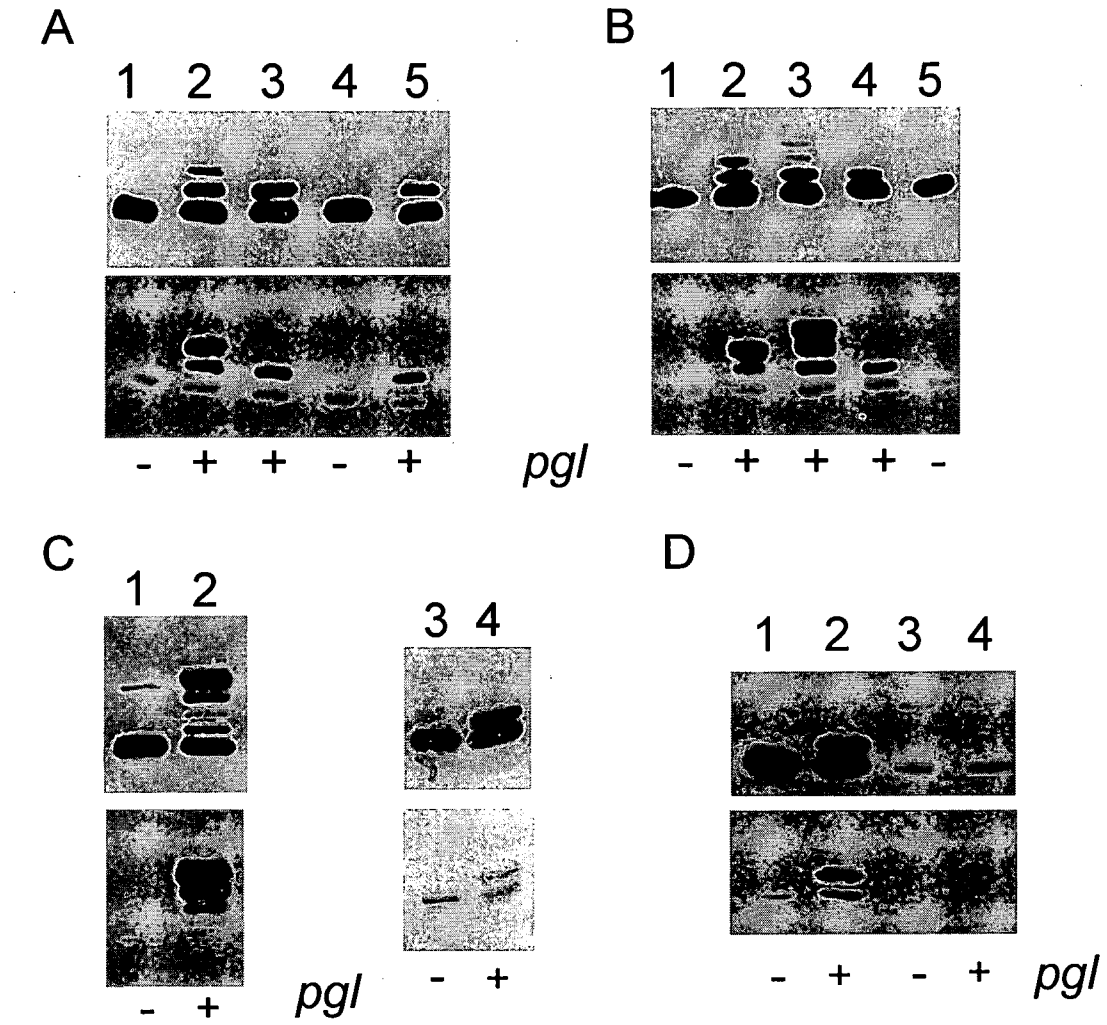


FIGURE 3



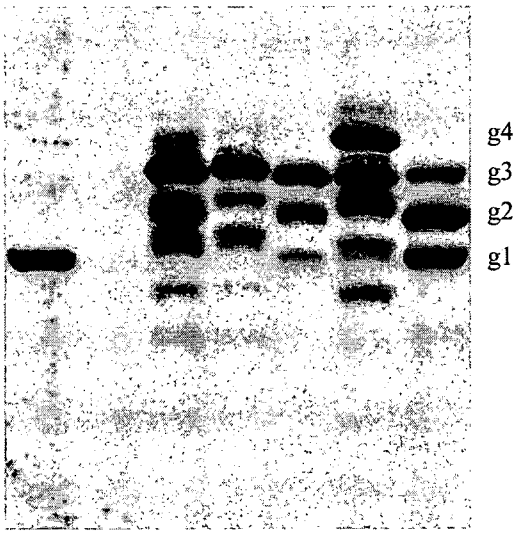


FIGURE 4

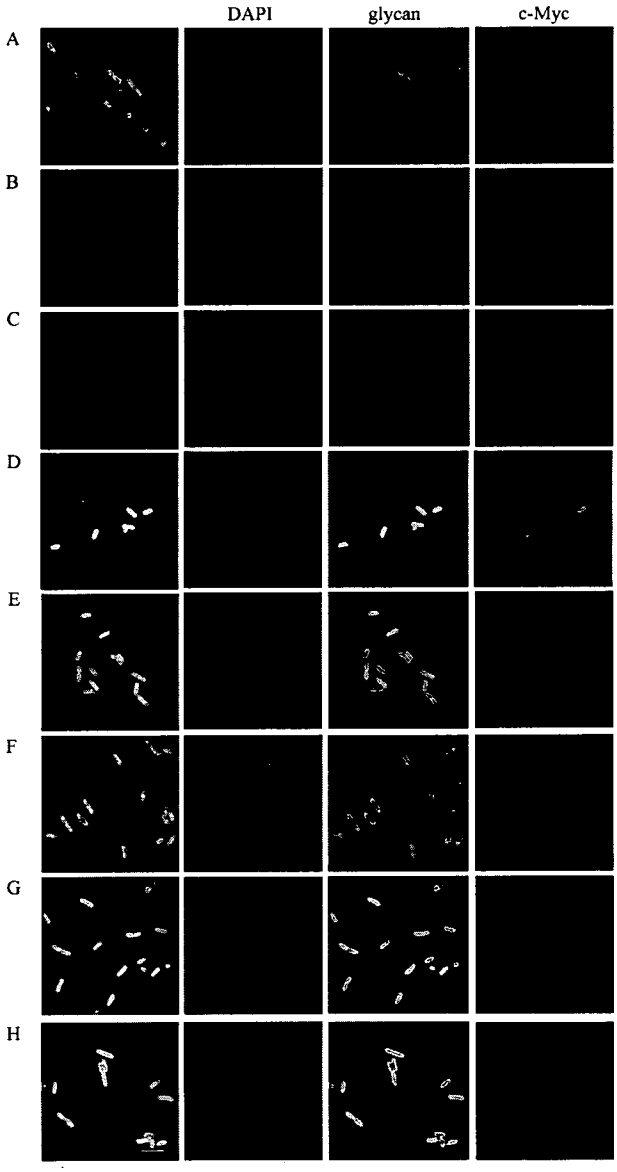


FIGURE 5A

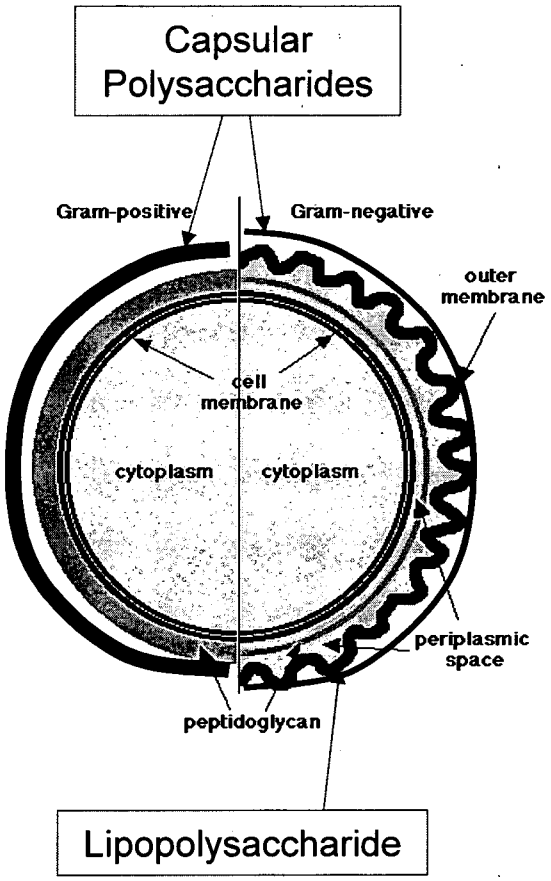


FIGURE 5B

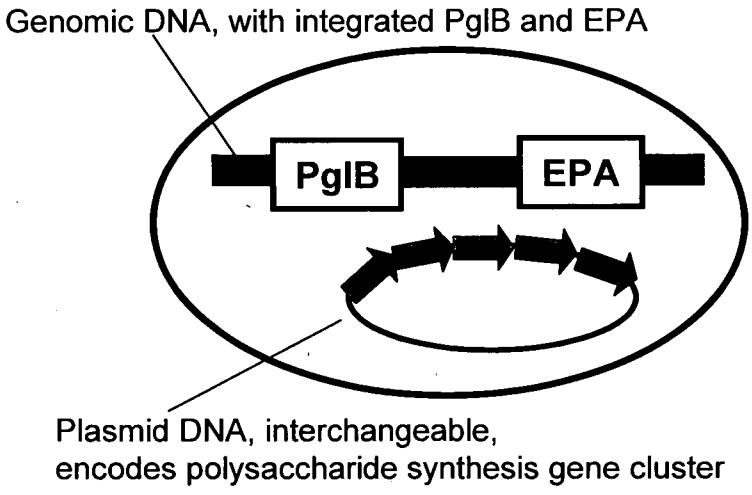
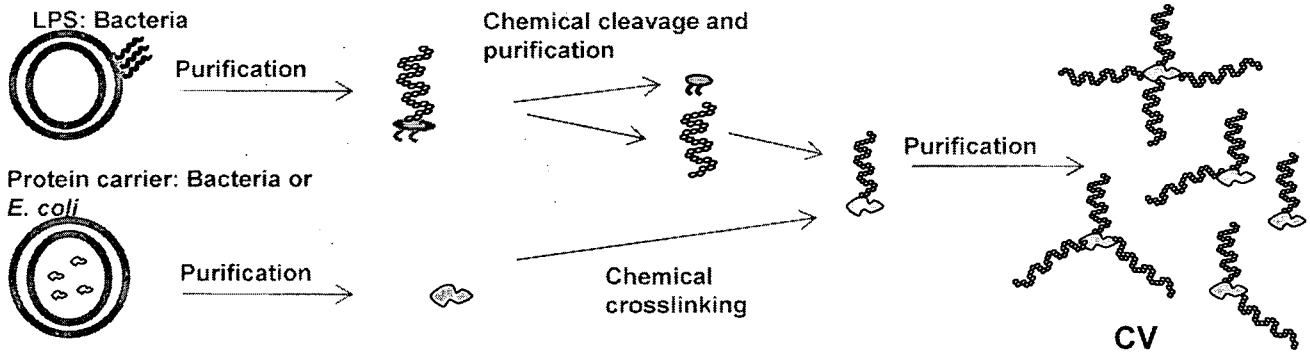


FIGURE 6A

2 fermentation runs, various purification steps



1 fermentation run, fewer purification steps

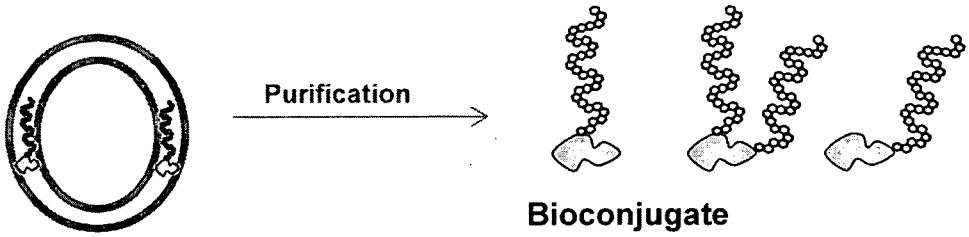


FIGURE 6B

galF:	subunit of glucose-1-phosphate uridylyltransferase
rmlB:	dTDP-glucose 4,6-dehydratase
rmlD:	dTDP-4-dehydrorhamnose reductase
rmlA:	dTDP-glucose pyrophosphorylase
rmlC:	dTDP-4-dehydrorhamnose 3,5-epimerase
wzx:	O-antigen flippase
wzy:	O-antigen polymerase
wbbR:	rhamnosyl transferase II
wbbQ:	rhamnosyl transferase I
rfpA:	not required
wbbP:	galactosyl transferase

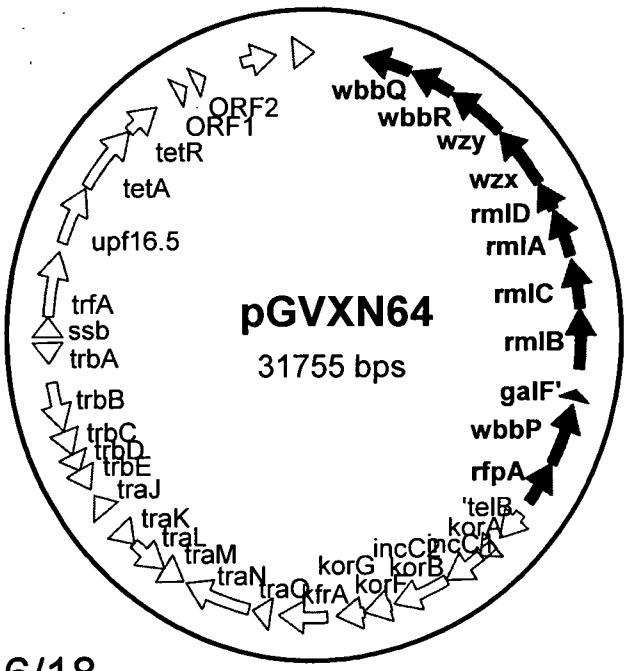


FIGURE 7A

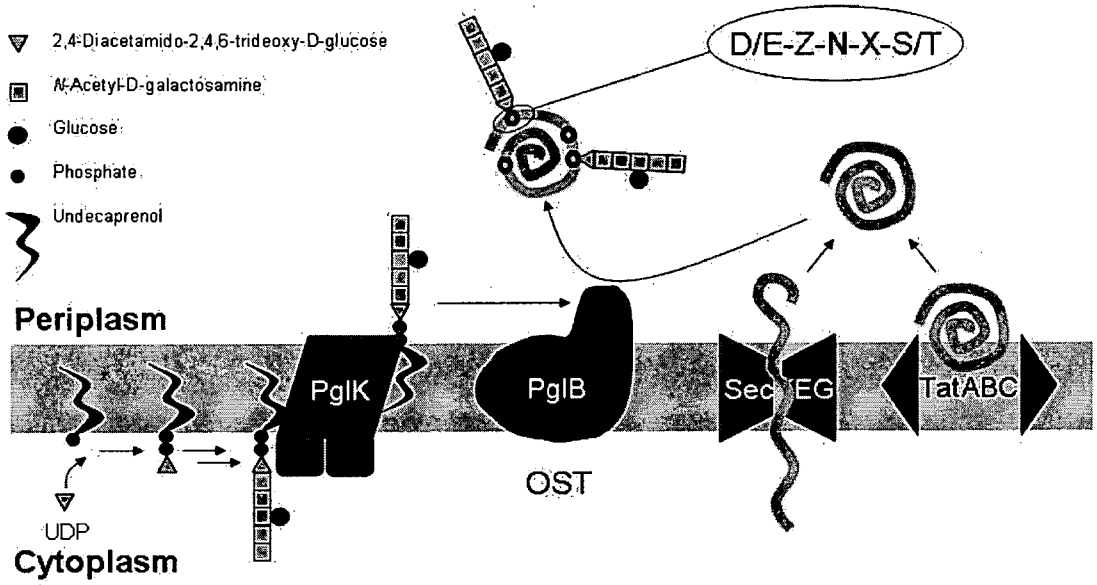


FIGURE 7B

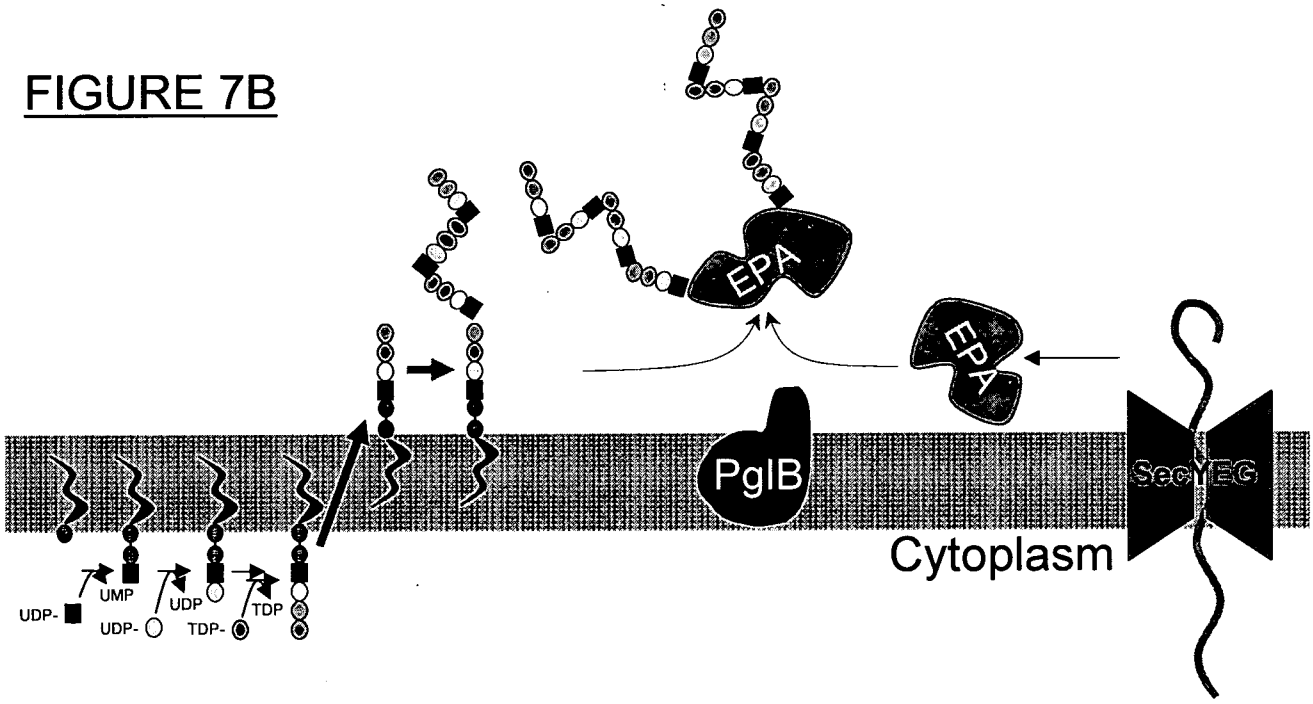


FIGURE 8A

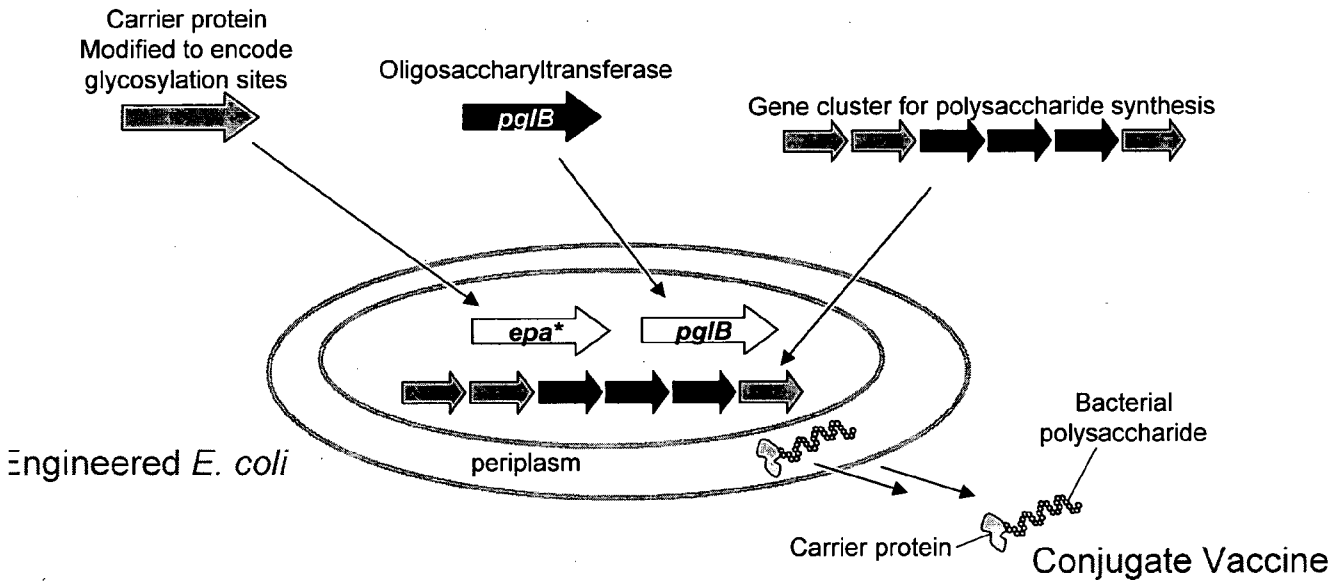
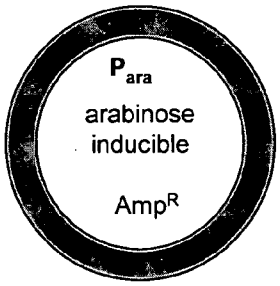


FIGURE 8B

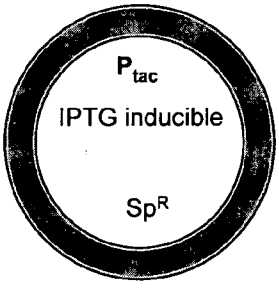
3 plasmids:

carrier protein



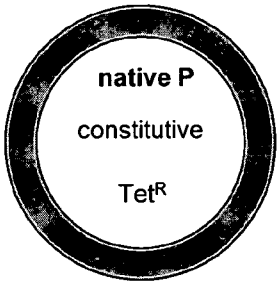
AcrA *Campylobacter jejuni*
directed to periplasm by
PelB signal peptide
2 N-glycosylation sites

oligosaccharyl-transferase



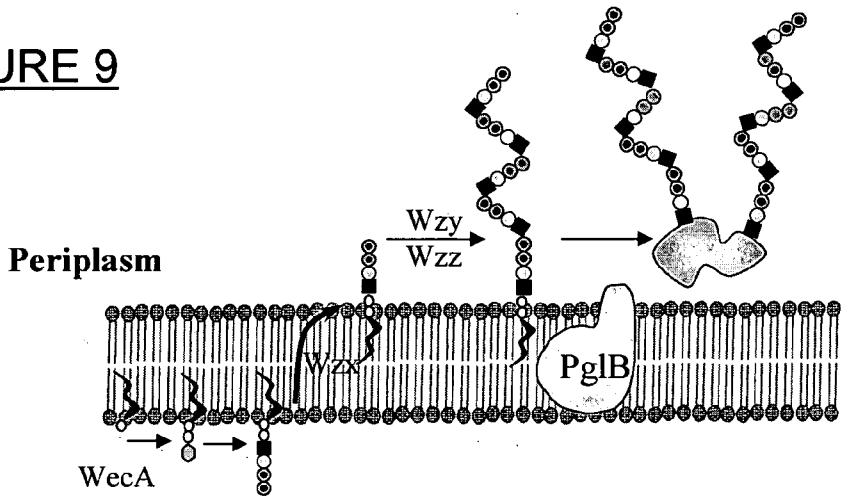
PglB *C. jejuni*
membrane
bound

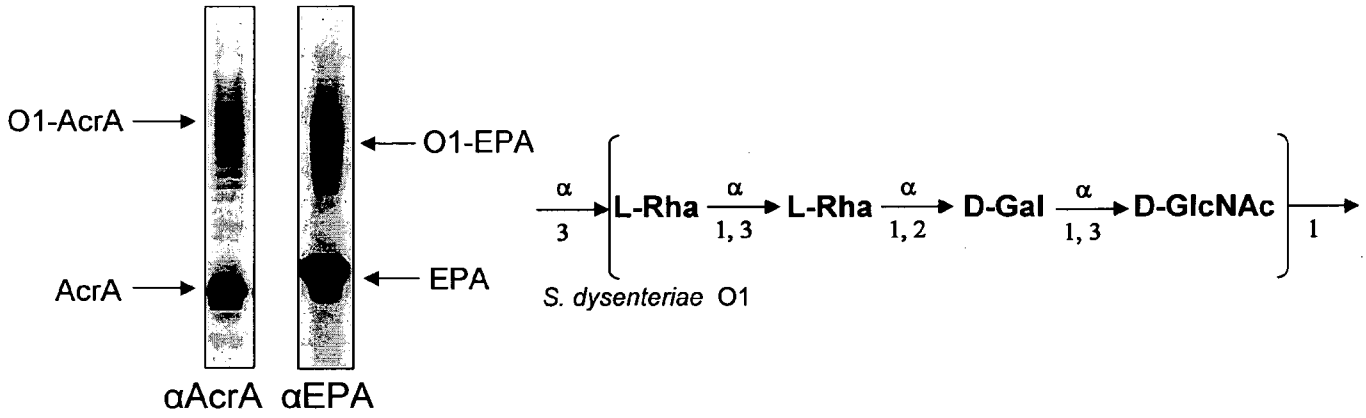
polysaccharide (O antigen) synthesis



***Shigella dysenteriae* O1**
polysaccharide synthesis
cluster

FIGURE 9


Periplasm
Wzy
Wzz
Wzx
PglB
WecA
Cytoplasm


O1-AcrA
AcrA
O1-EPA
EPA
αAcrA
αEPA
α
3
L-Rha
α
1, 3
L-Rha
α
1, 2
D-Gal
α
1, 3
D-GlcNAc
1
S. dysenteriae O1

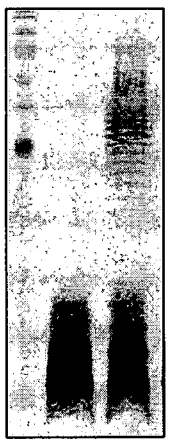

Silver

FIGURE 10A

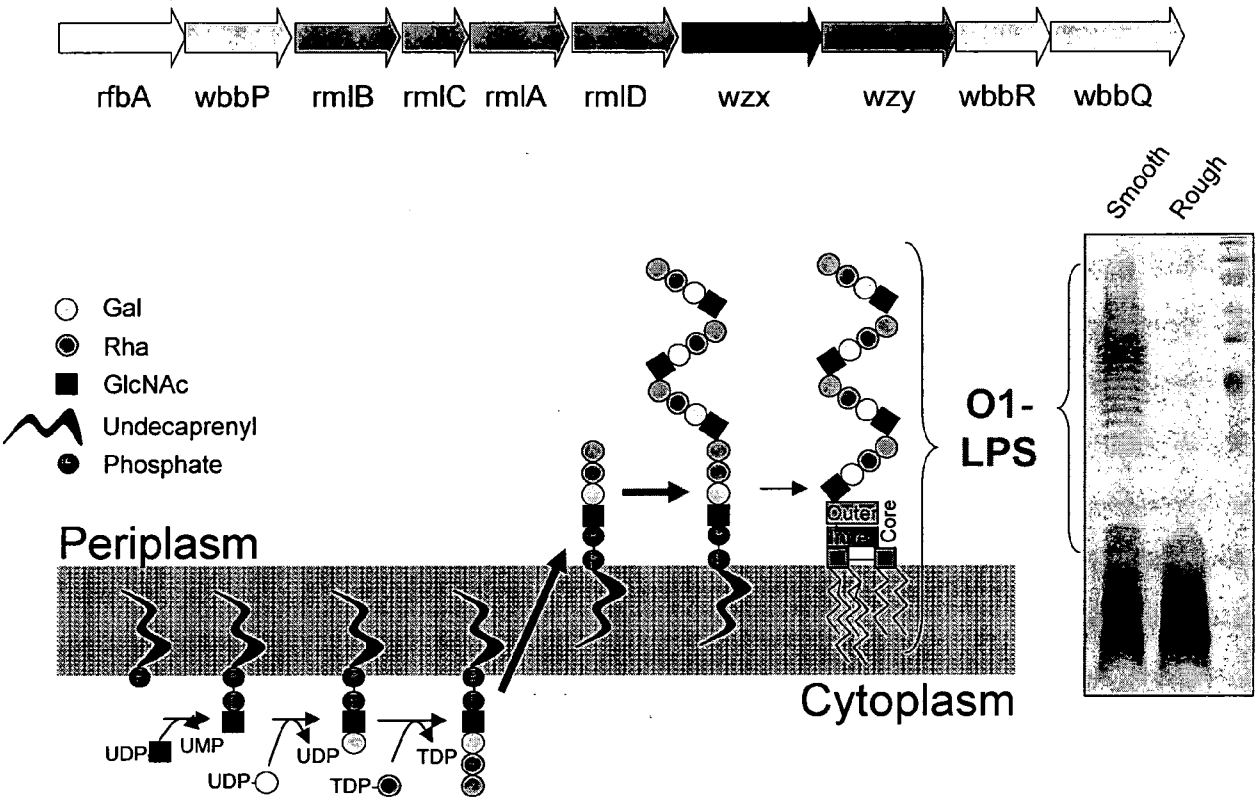


FIGURE 10B

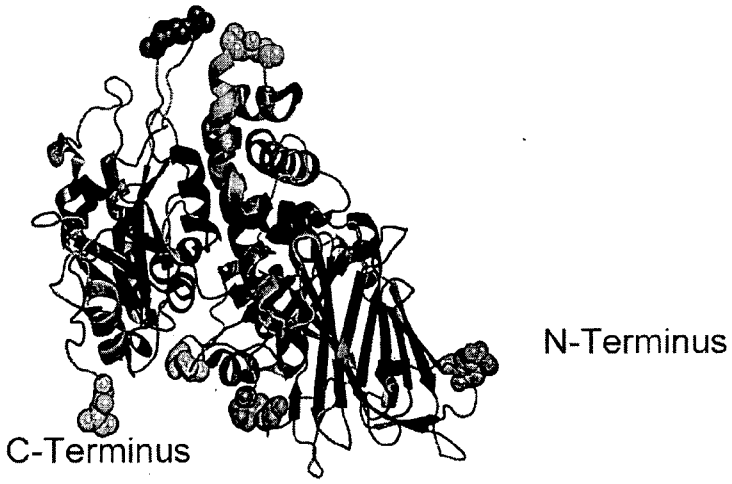
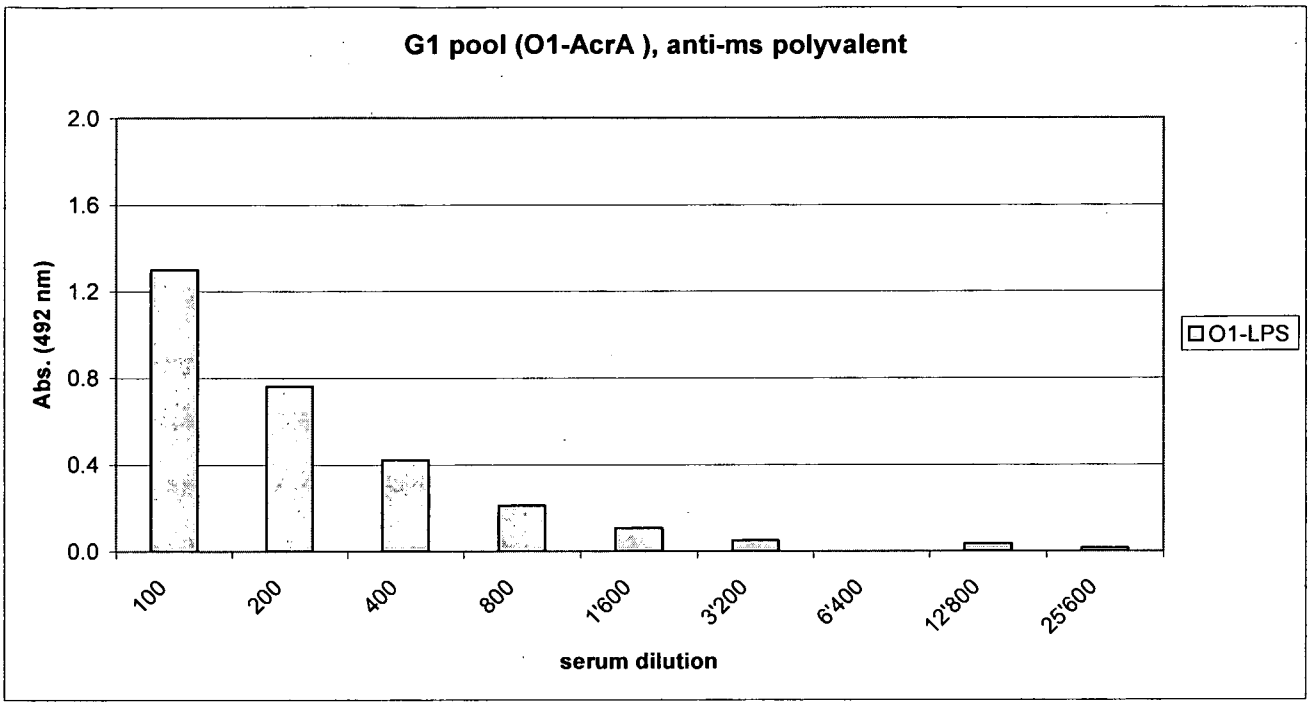


FIGURE 11


G1 pool (O1-AcrA), anti-ms polyvalent
2.0
1.6
1.2
0.8
0.4
0.0
Abs. (492 nm)
100
200
400
800
1'600
3'200
6'400
12'800
25'600
serum dilution
O1-LPS

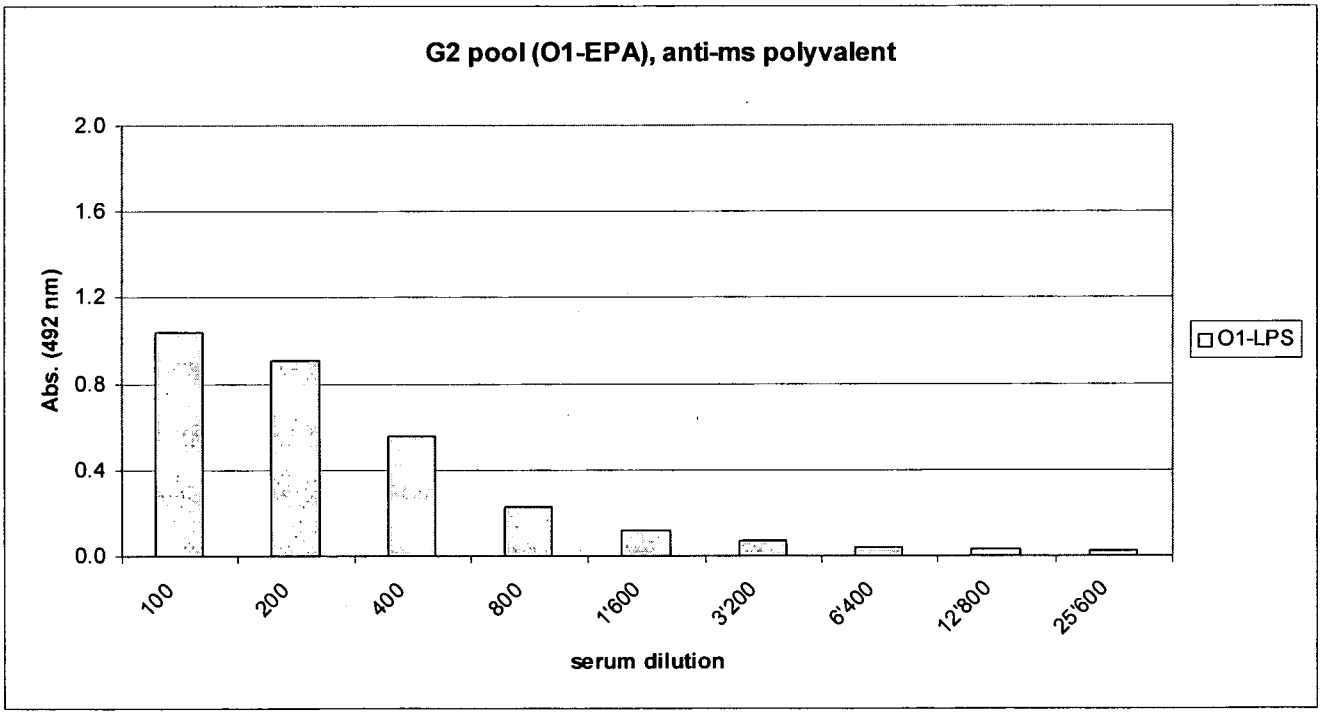

G2 pool (O1-EPA), anti-ms polyvalent
2.0
1.6
1.2
0.8
0.4
0.0
Abs. (492 nm)
100
200
400
800
1'600
3'200
6'400
12'800
25'600
serum dilution
O1-LPS

FIGURE 12

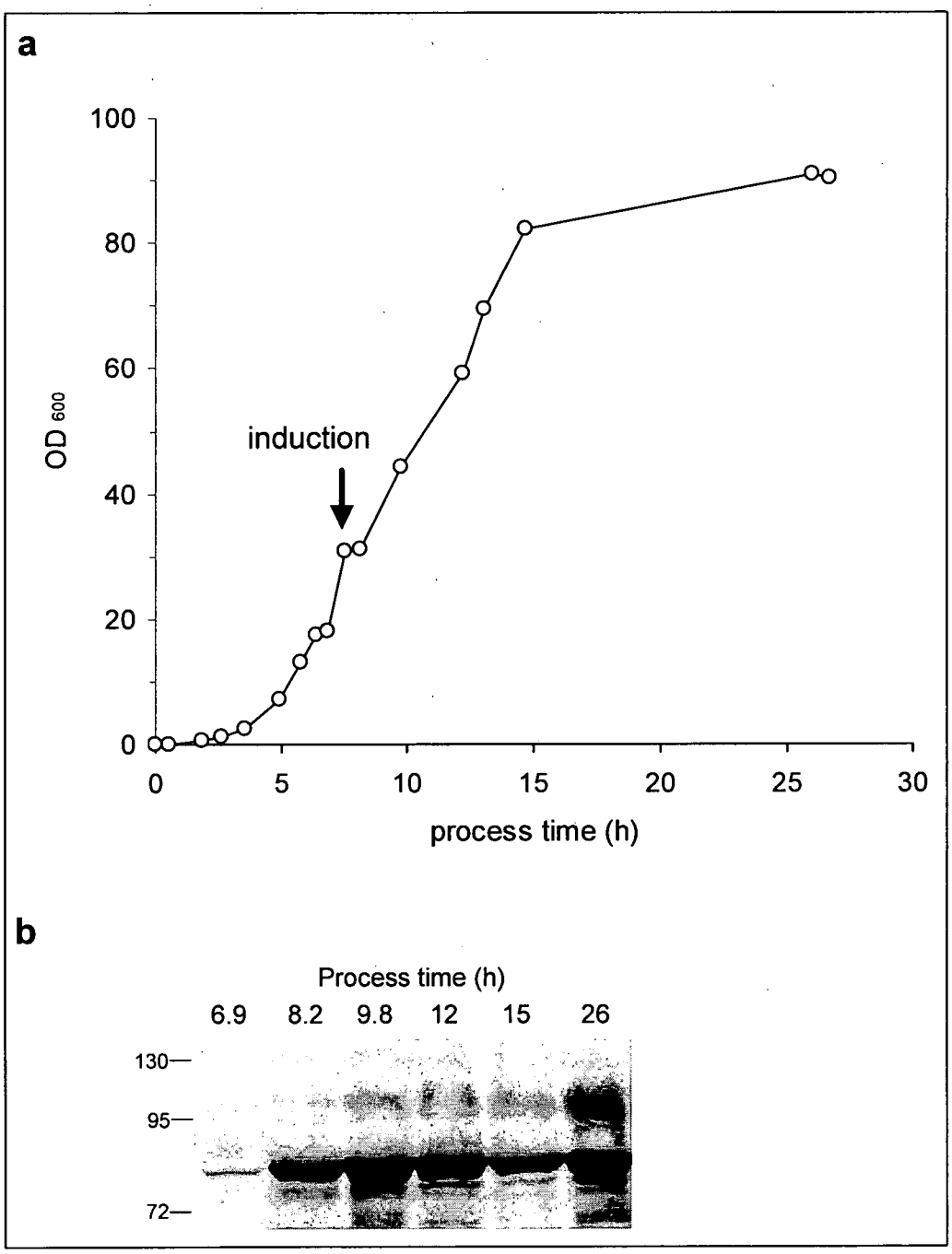
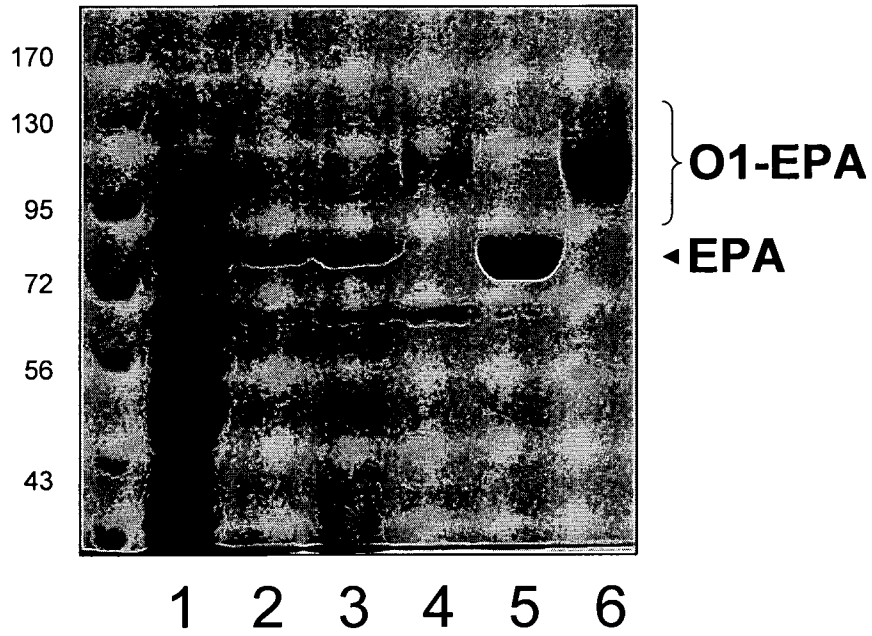

a
100
80
60
40
20
0
OD 600
induction
0
5
10
15
20
25
30
process time (h)
b
Process time (h)
6.9
8.2
9.8
12
15
26
130
95
72

FIGURE 13



1. Whole cells
2. Periplasmic Extract
3. IEX Load (Source Q)
4. IEX Eluate 1
5. IEX Eluate 2
6. Eluate 1 (Fluoroapatite)

FIGURE 14A

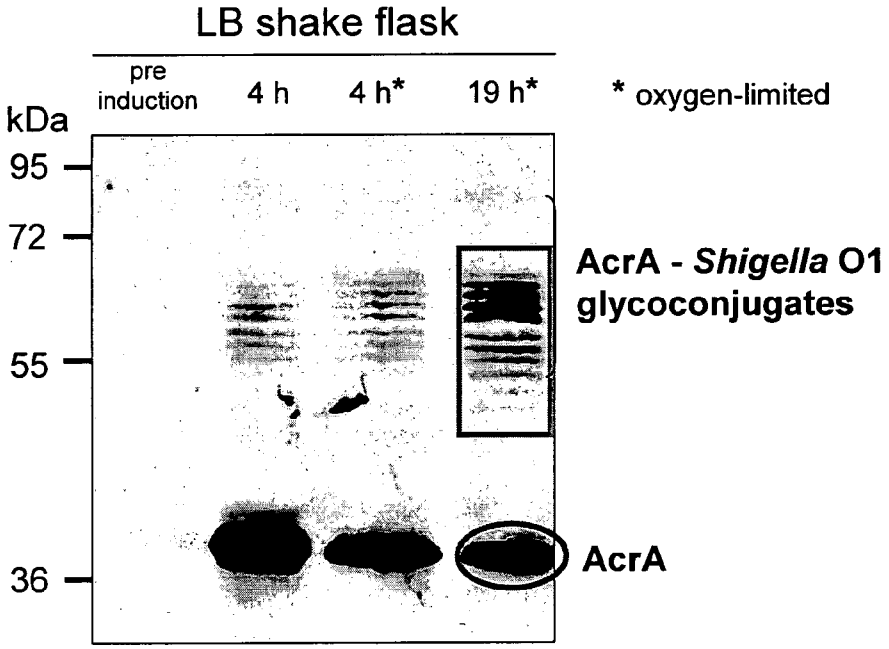


FIGURE 14B

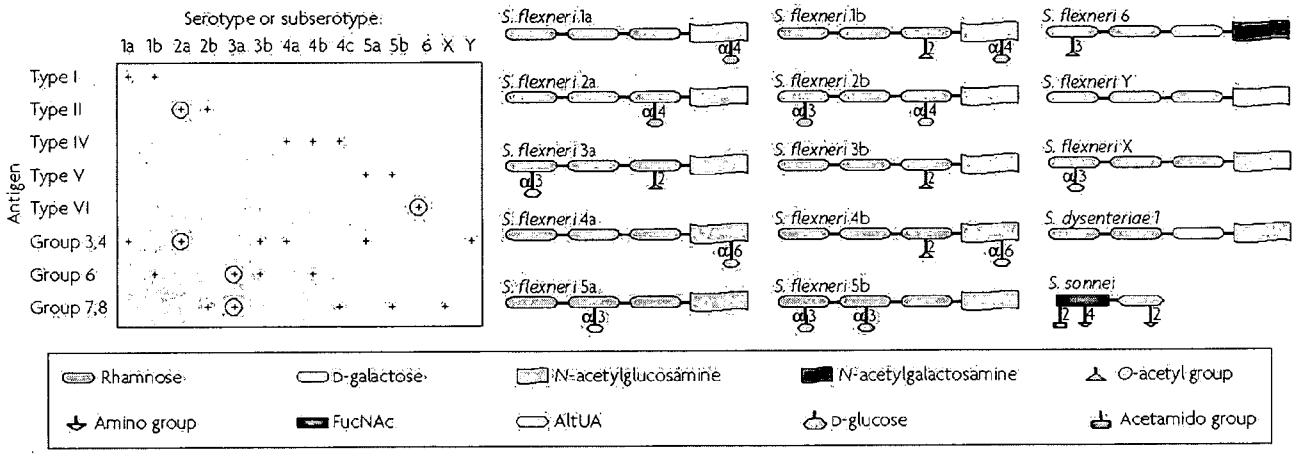


FIGURE 15

Expansion of anomeric region of ^{1}H NMR spectrum of O1-EPA

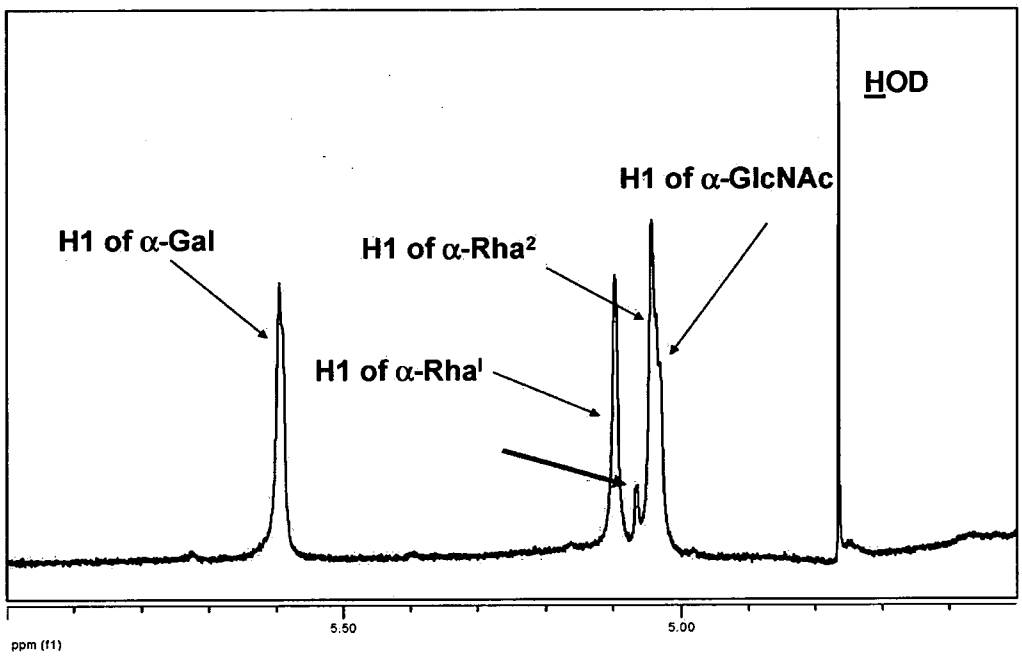


FIGURE 16A

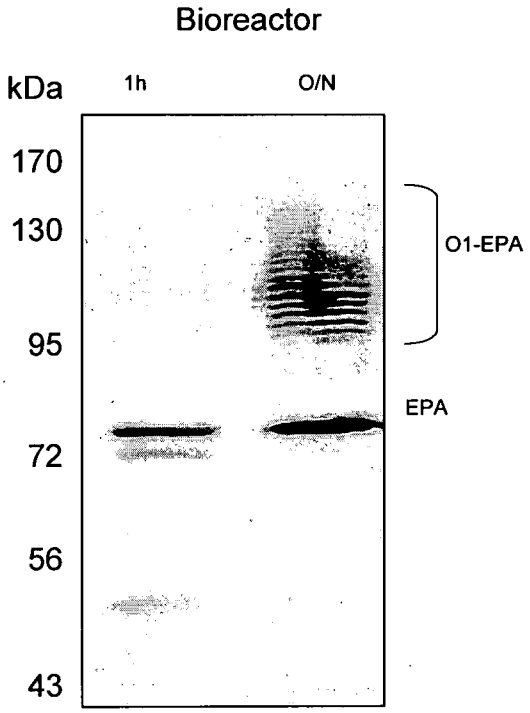


FIGURE 16B

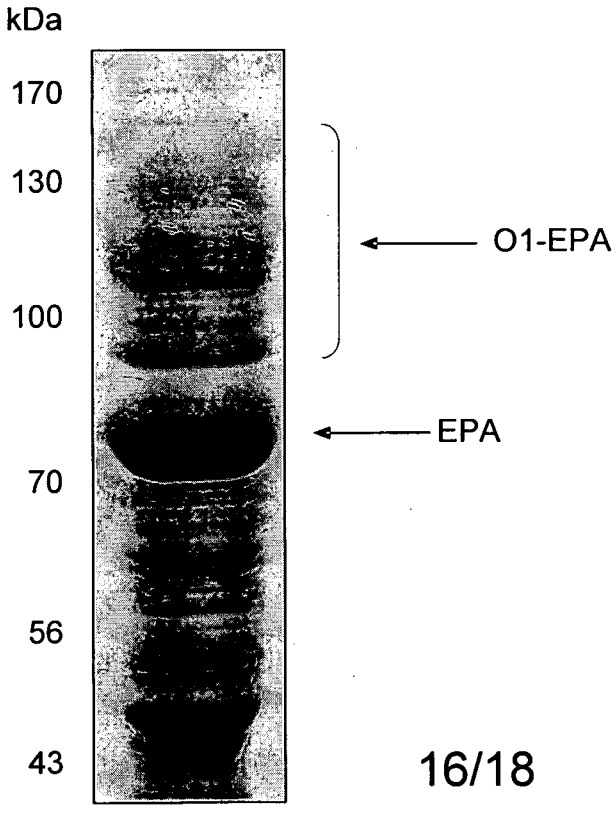


FIGURE 17A

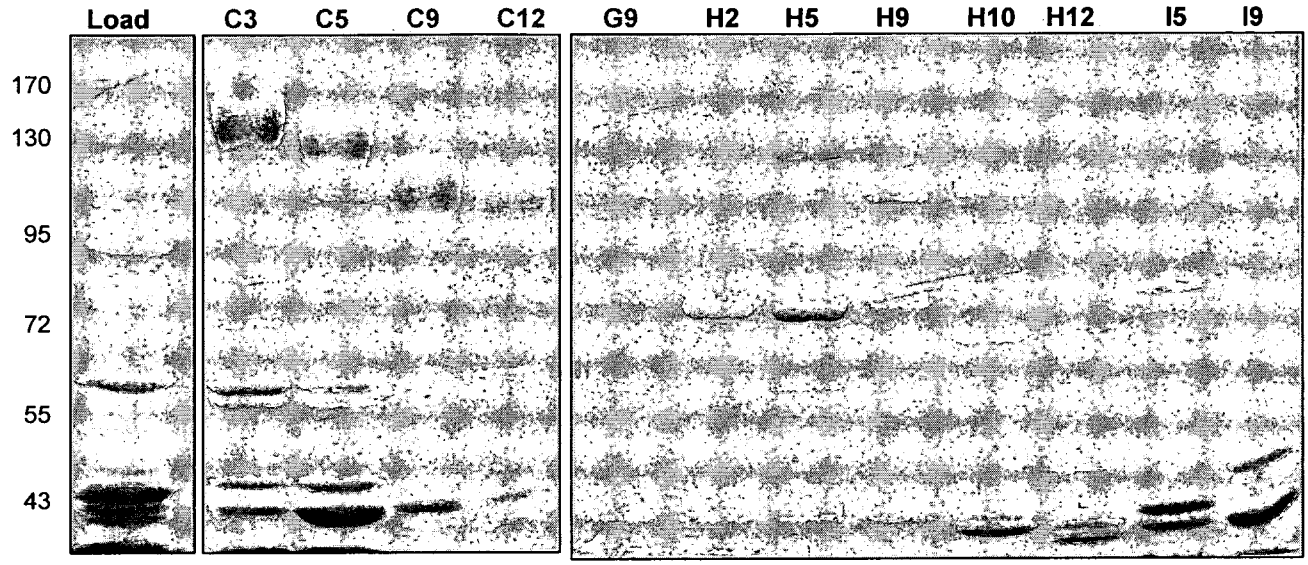


FIGURE 17B

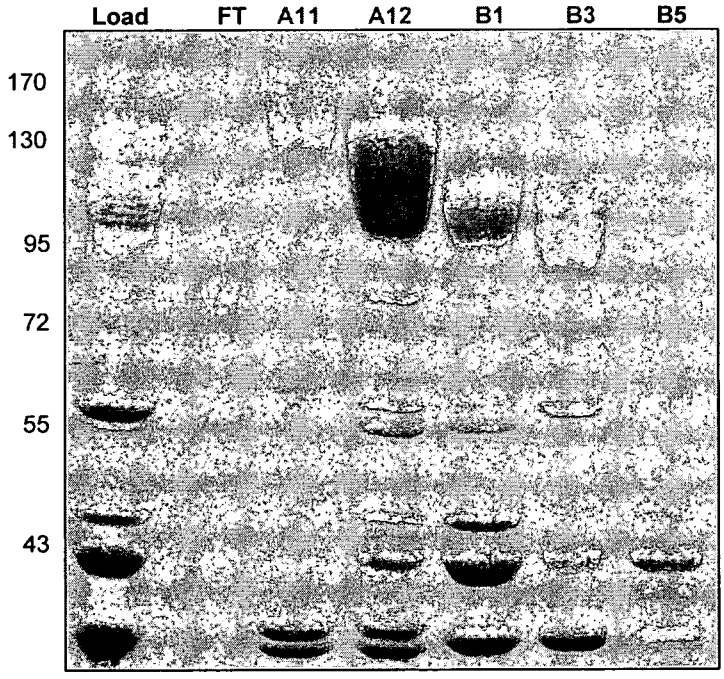


FIGURE 18A

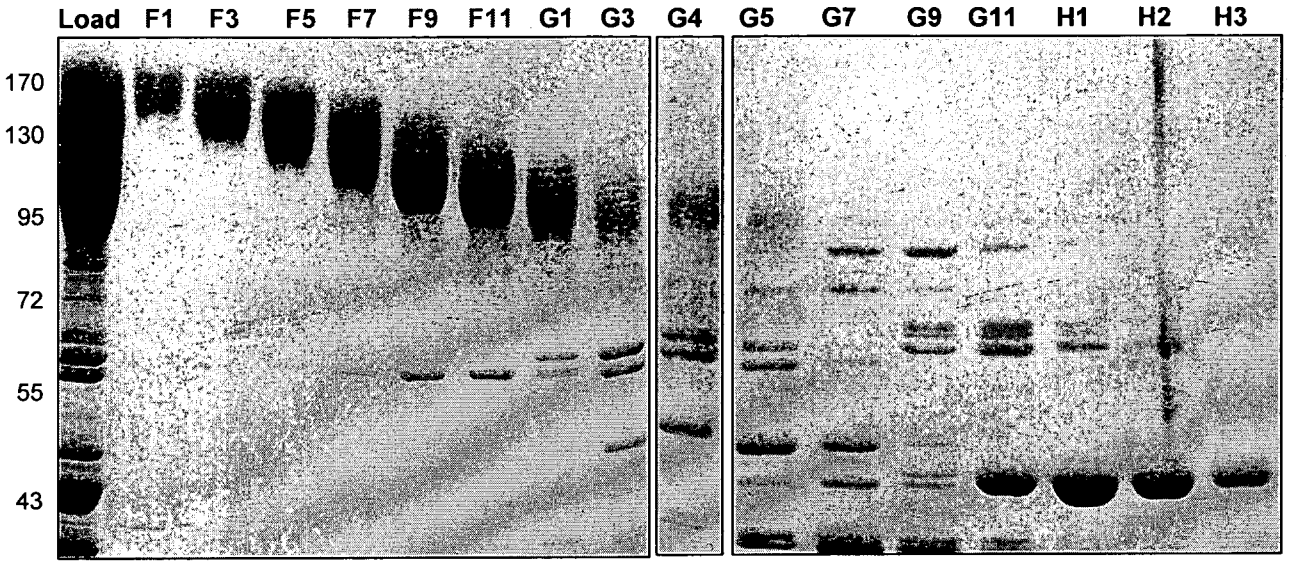


FIGURE 18B

