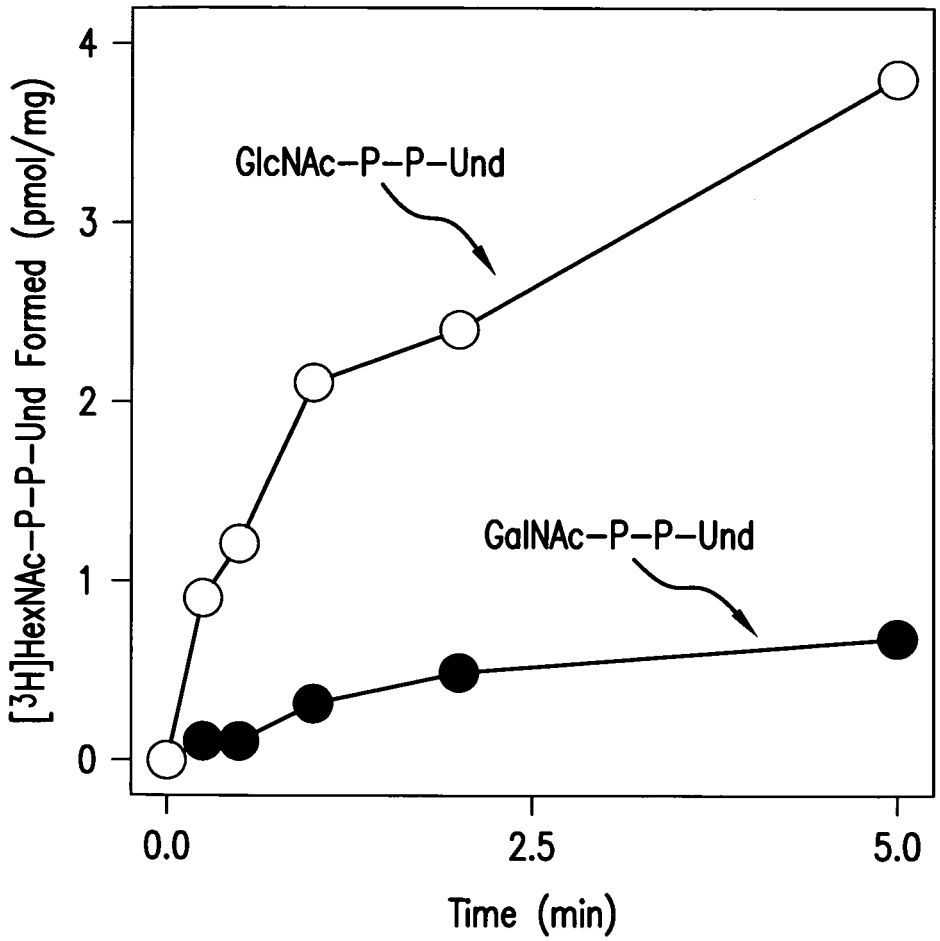

[3H]HexNAc-P-P-Und Formed (pmol/mg)
4
3
2
1
0
GlcNAc-P-P-Und
GalNAc-P-P-Und
0.0
2.5
5.0
Time (min)

FIG. 1

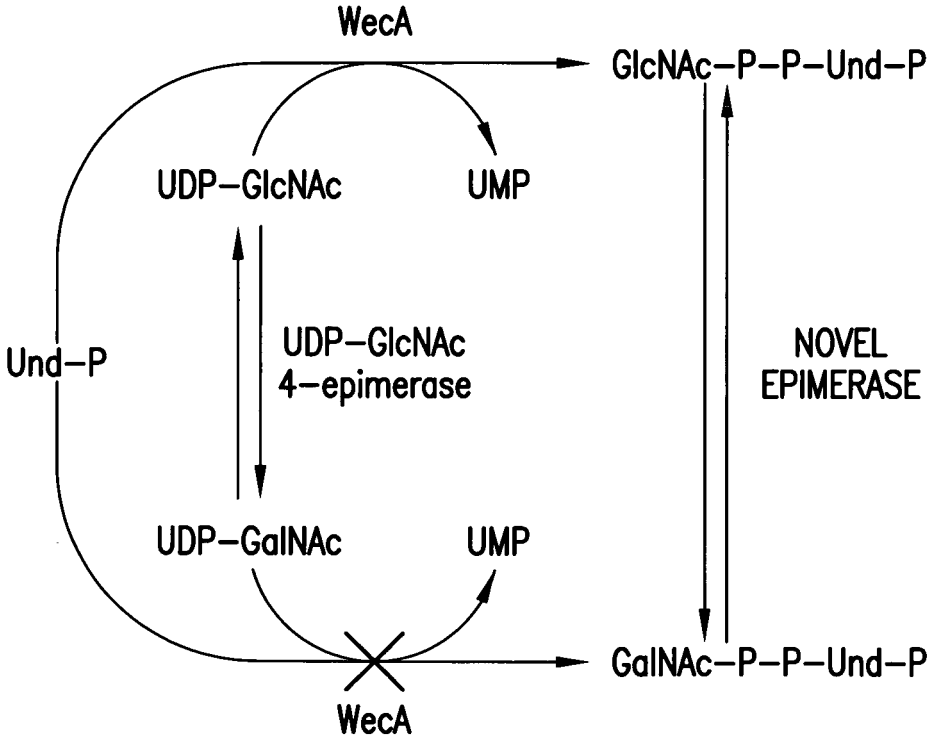

WecA
GlcNAc-P-P-Und-P
UDP-GlcNAc
UMP
Und-P
UDP-GlcNAc
4-epimerase
NOVEL
EPIMERASE
UDP-GalNAc
UMP
GalNAc-P-P-Und-P
WecA

FIG.2

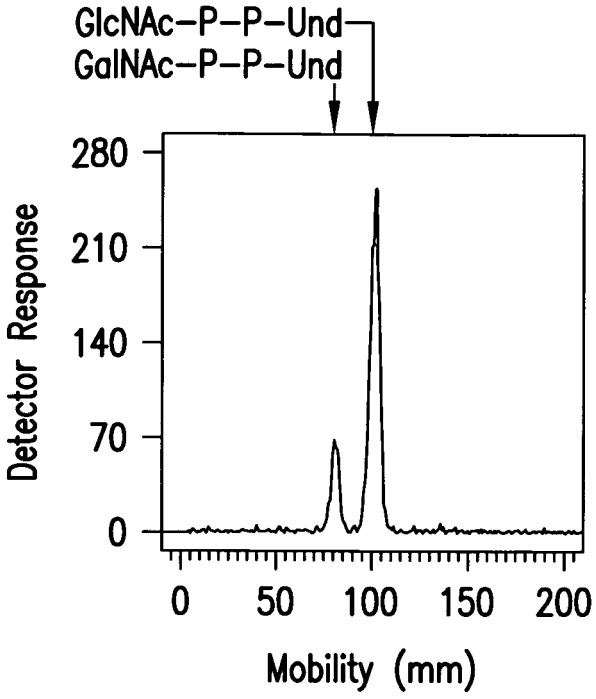


FIG.3A

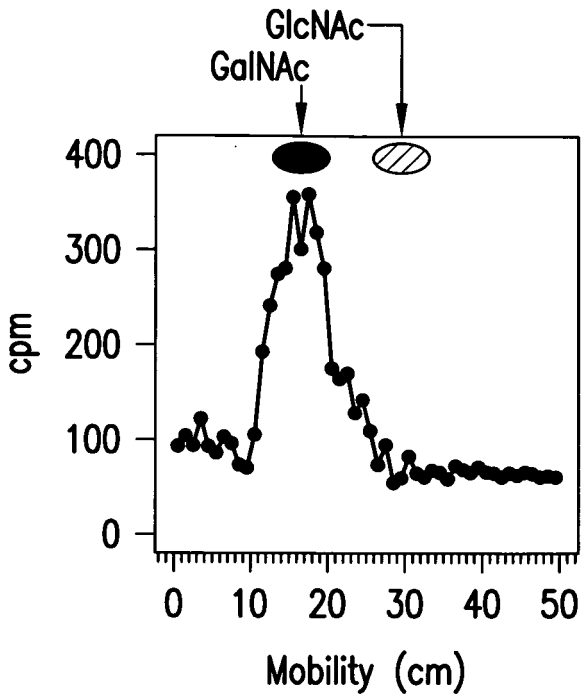


FIG.3C

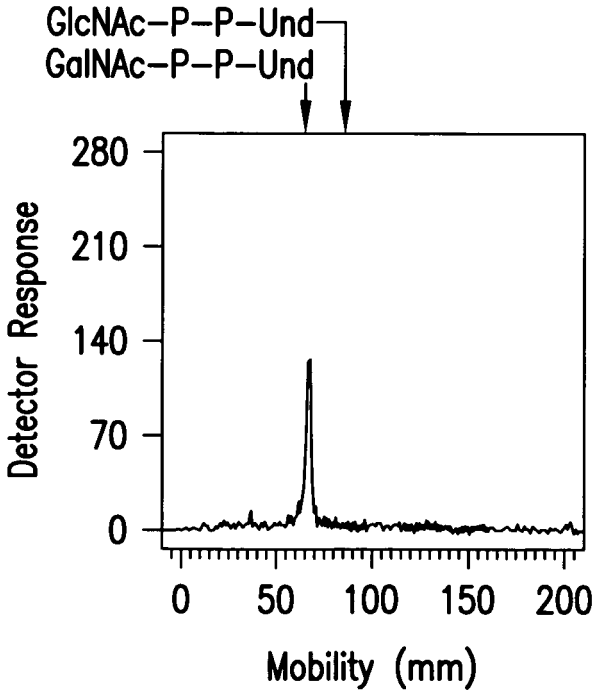


FIG.3B

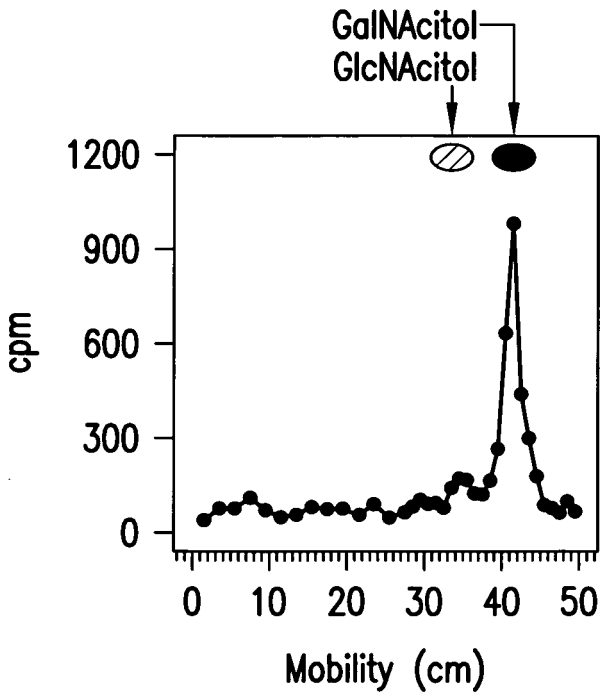


FIG.3D

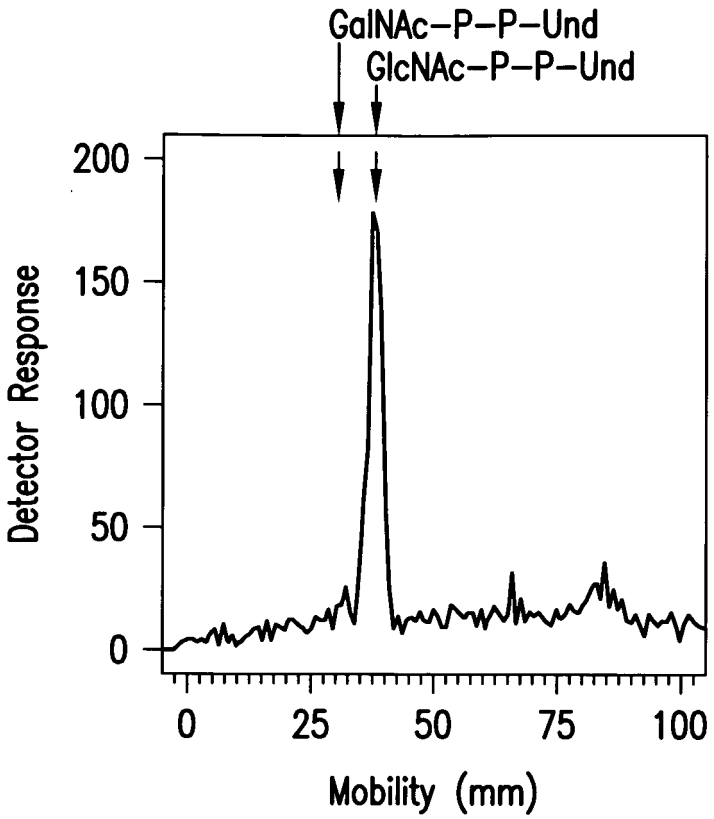

GalNAc-P-P-Und
GlcNAc-P-P-Und
200
150
100
50
0
Detector Response
0
25
50
75
100
Mobility (mm)

FIG.4A

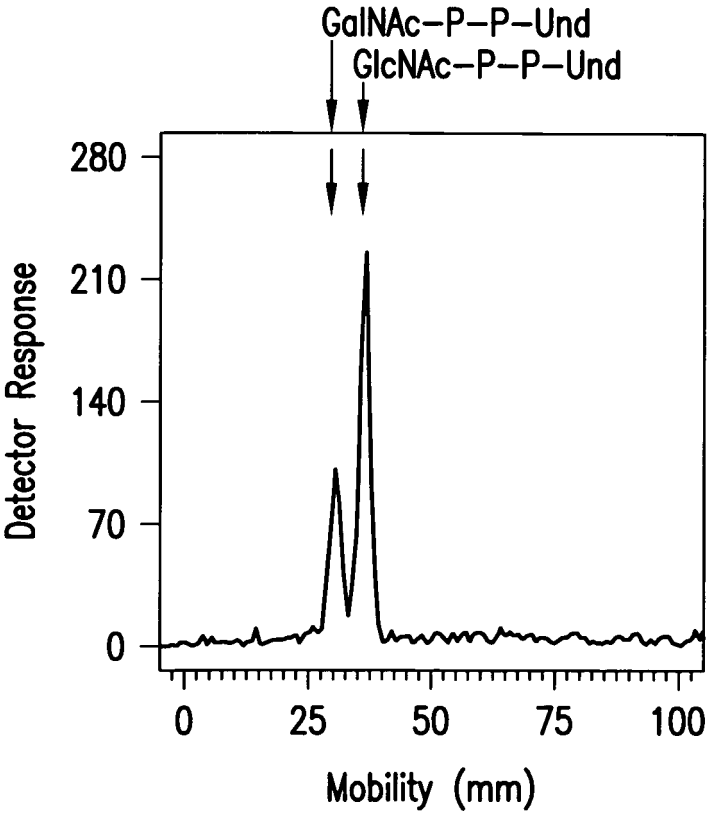

GalNAc-P-P-Und
GlcNAc-P-P-Und
280
210
140
70
0
Detector Response
0
25
50
75
100
Mobility (mm)

FIG.4B

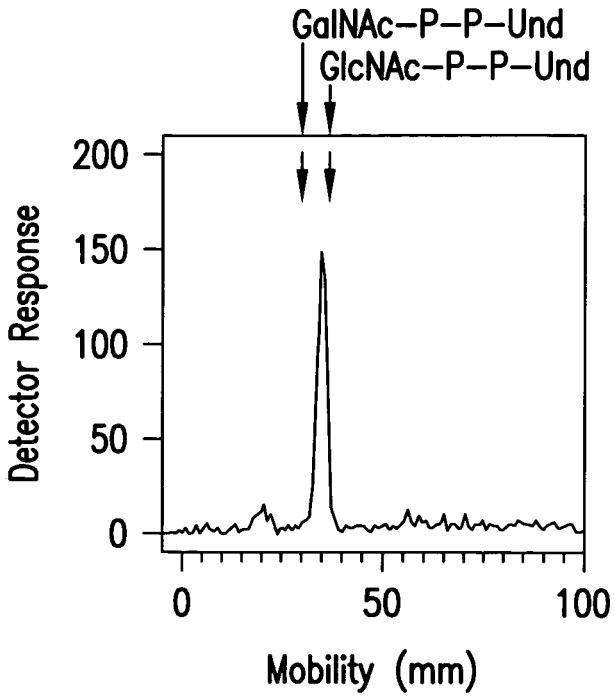


FIG.5A

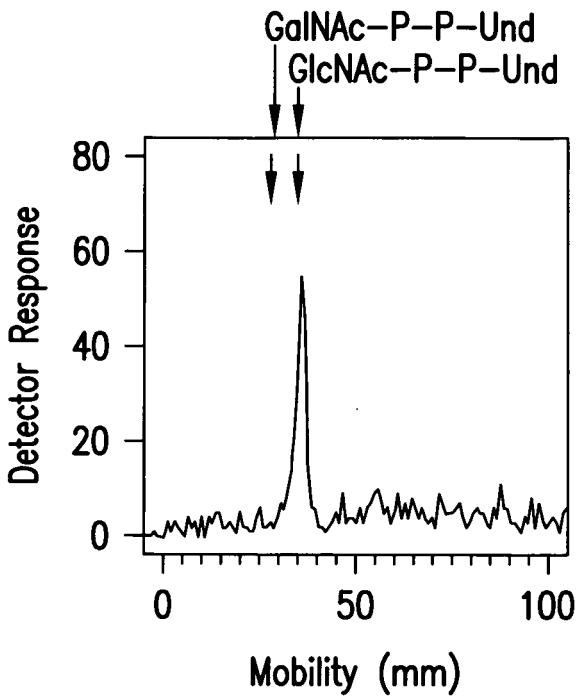


FIG.5C

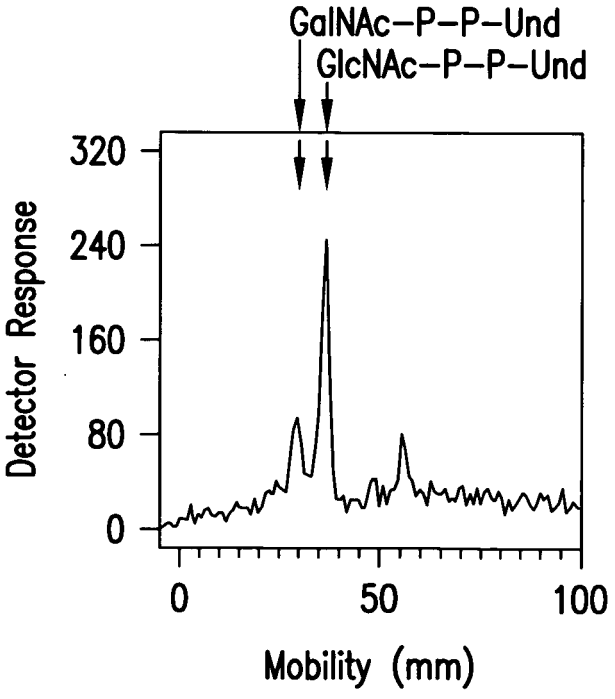


FIG.5B

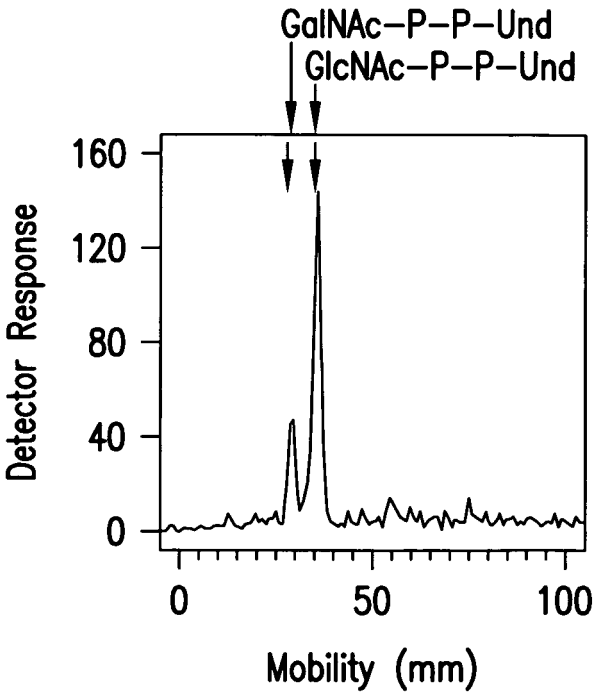


FIG.5D

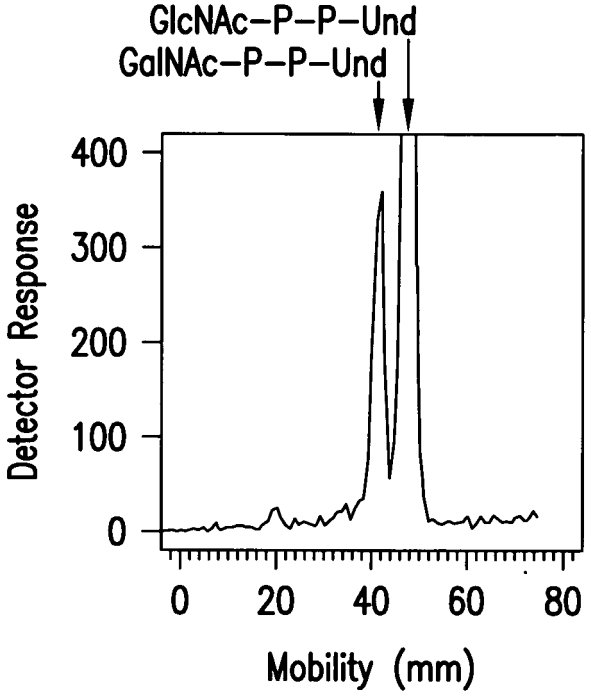


FIG.6A

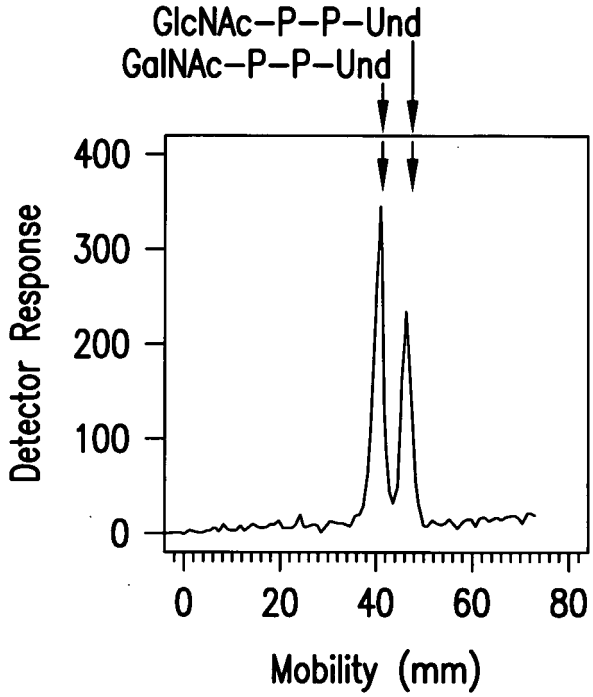


FIG.6B

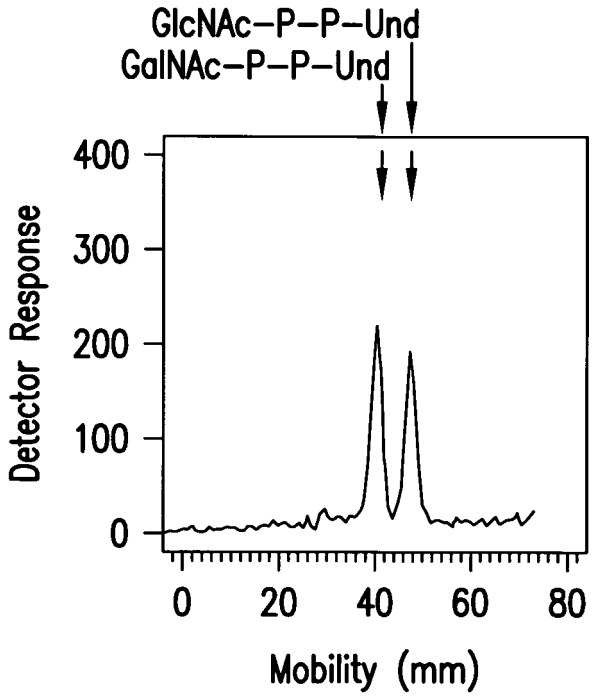


FIG.6C

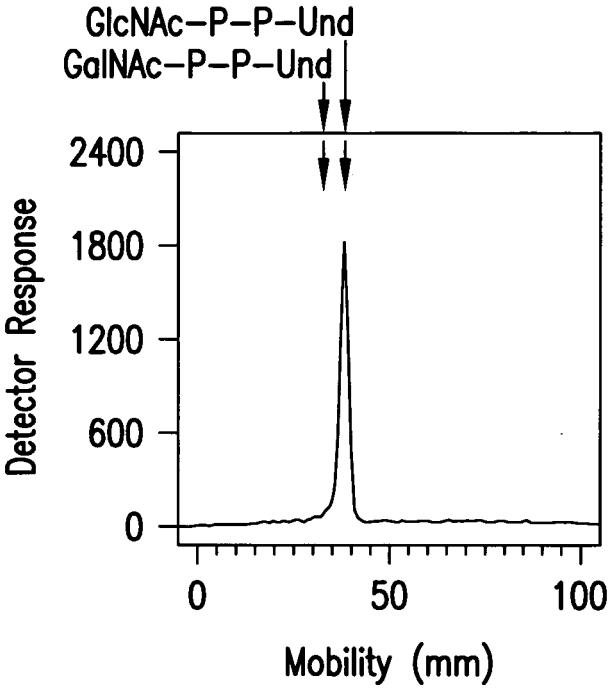


FIG.7A

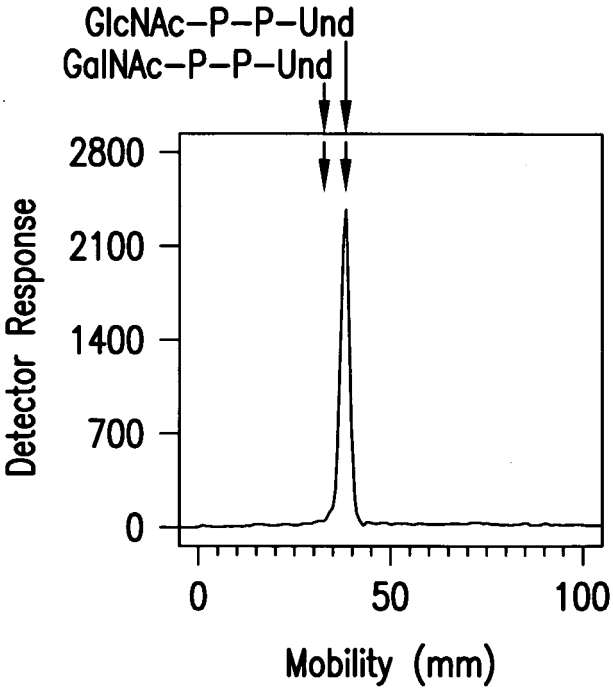


FIG.7B

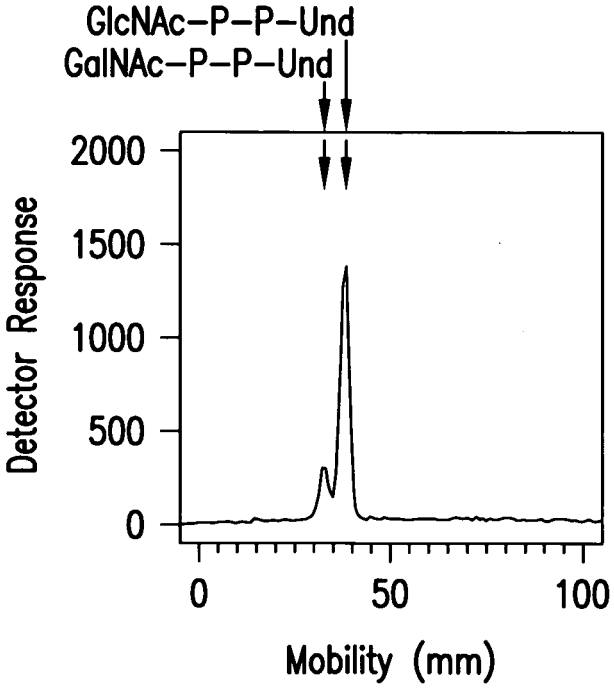


FIG.7C

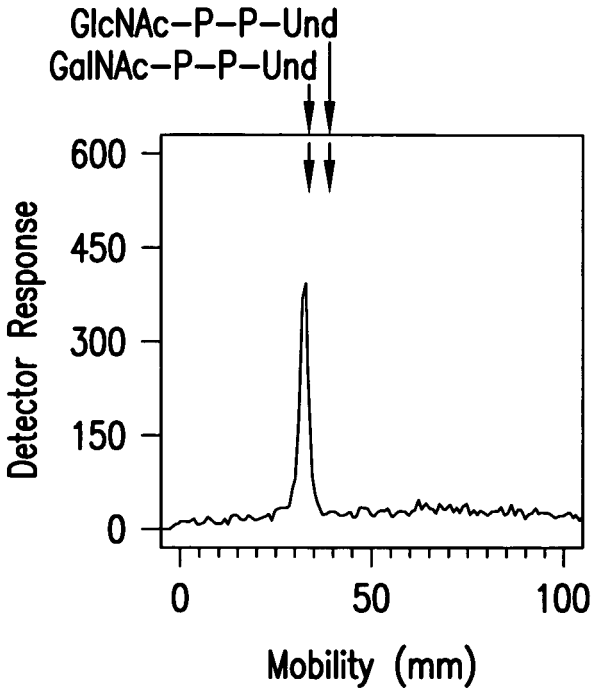


FIG.7D

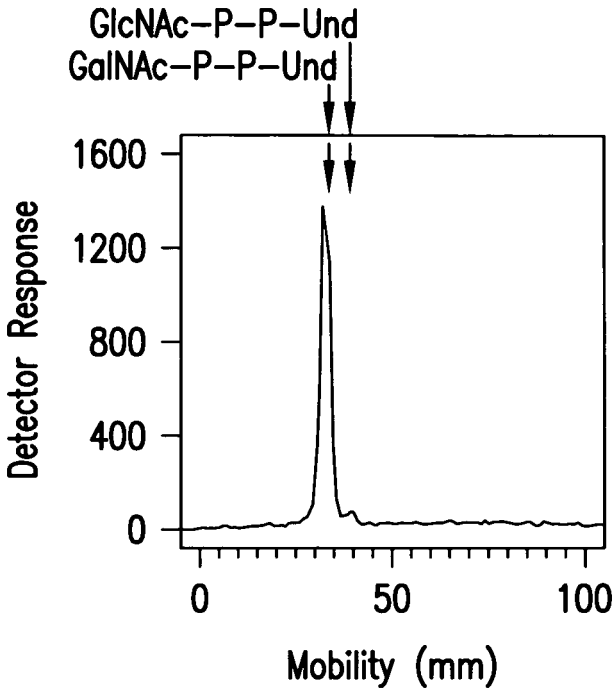


FIG.7E

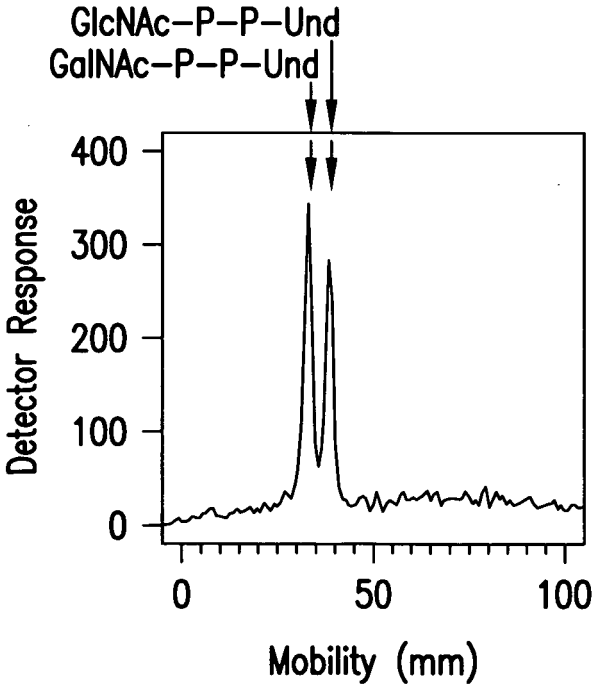


FIG.7F

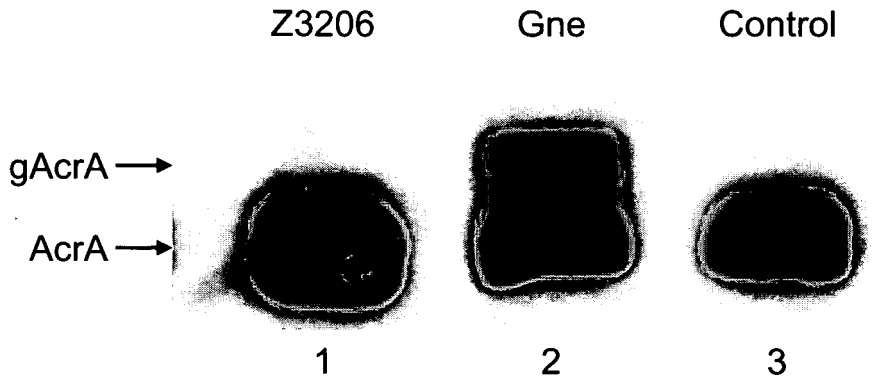


FIG.8

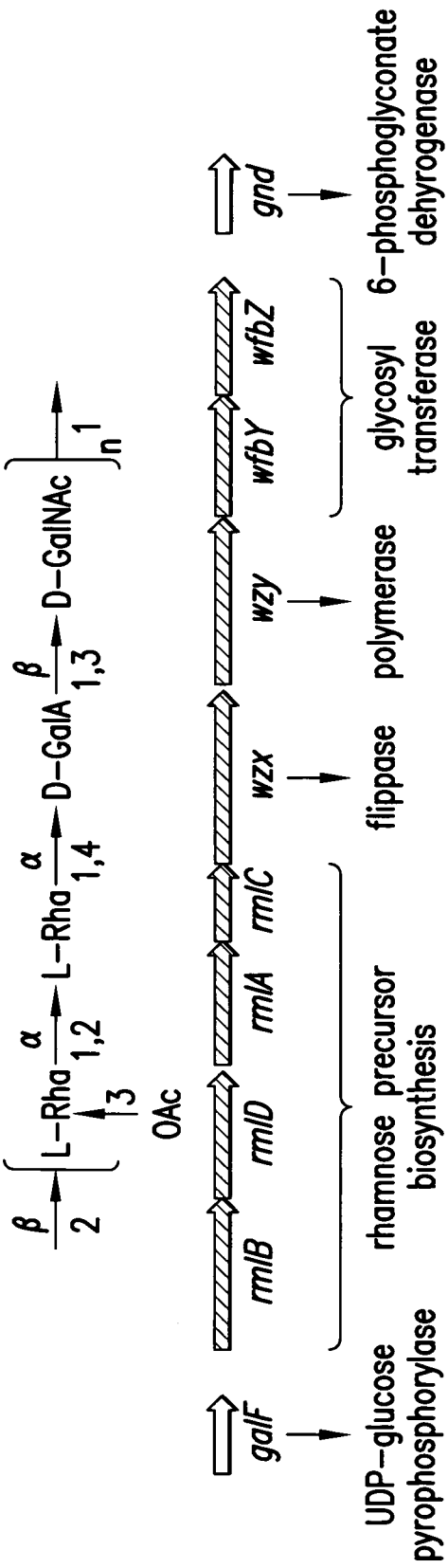

β
2
L-Rha
α
1,2
3
OAc
L-Rha
α
1,4
D-GalA
β
1,3
D-GalNAc
n
1
galF
rmlB
rmlD
rmlA
rmlC
wzx
wzy
wfbY
wfbZ
gnd
UDP-glucose pyrophosphorylase
rhamnose precursor biosynthesis
flippase
polymerase
glycosyl transferase
6-phosphoglyconate dehyrogenase

FIG.9

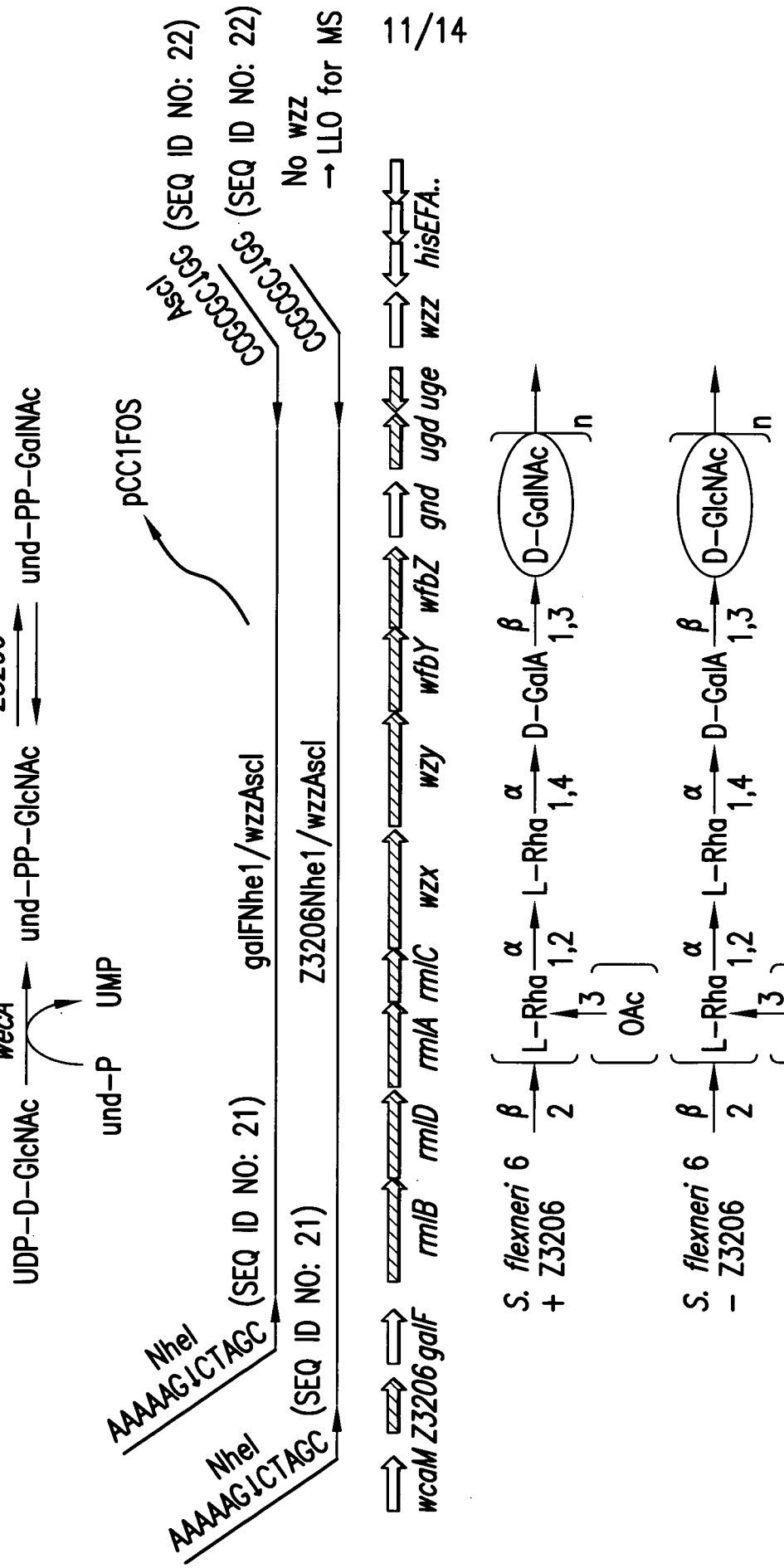
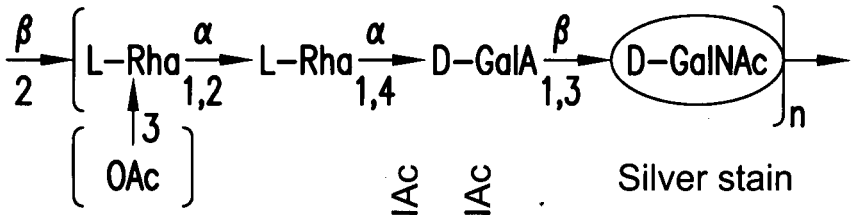

UDP–D–GlcNAc
wecA
und–P
UMP
und–PP–GlcNAc
Z3206
und–PP–GalNAc
pCC1FOS
AscI CCGCGCGC (SEQ ID NO: 22)
CCGCGCGC (SEQ ID NO: 22)
CCGCGCGC
No wzz
→ LLO for MS
NheI AAAAAG↓CTAGC (SEQ ID NO: 21)
galFNheI/wzzAscI
NheI AAAAAG↓CTAGC (SEQ ID NO: 21)
Z3206NheI/wzzAscI
wcaM Z3206 galF mlB mlD mlA mlC wzx wzy wfbY wfbZ gnd ugd uge wzz hisEFA..
S. flexneri 6 + Z3206
S. flexneri 6 – Z3206
L–Rha
D–GalA
D–GalNAc
D–GlcNAc
OAc
n

FIG.10

+ Z3206



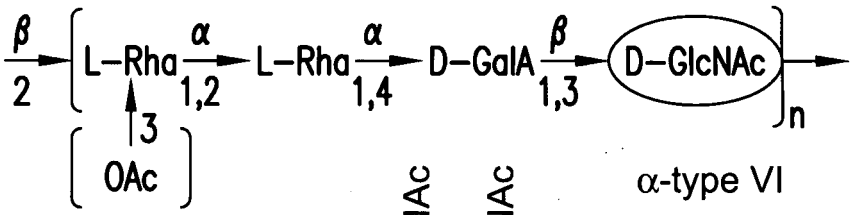
GlcNAc GalNAc

Silver stain



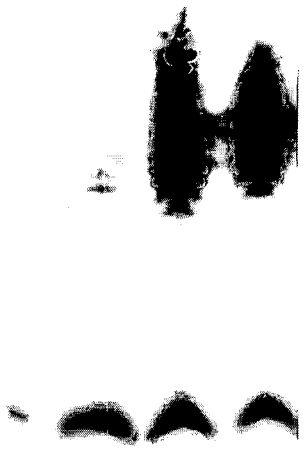
	1	2	3	4
S.Flex 6 O-antigen	X	✓	✓	✓
Z3206	X	X	✓	✓
wzz	X	X	X	✓

− Z3206



GlcNAc GalNAc

α-type VI



	1	2	3	4
S.Flex 6 O-antigen	X	✓	✓	✓
Z3206	X	X	✓	✓
wzz	X	X	X	✓

10 µl load

12% Bis Tris

FIG. 11

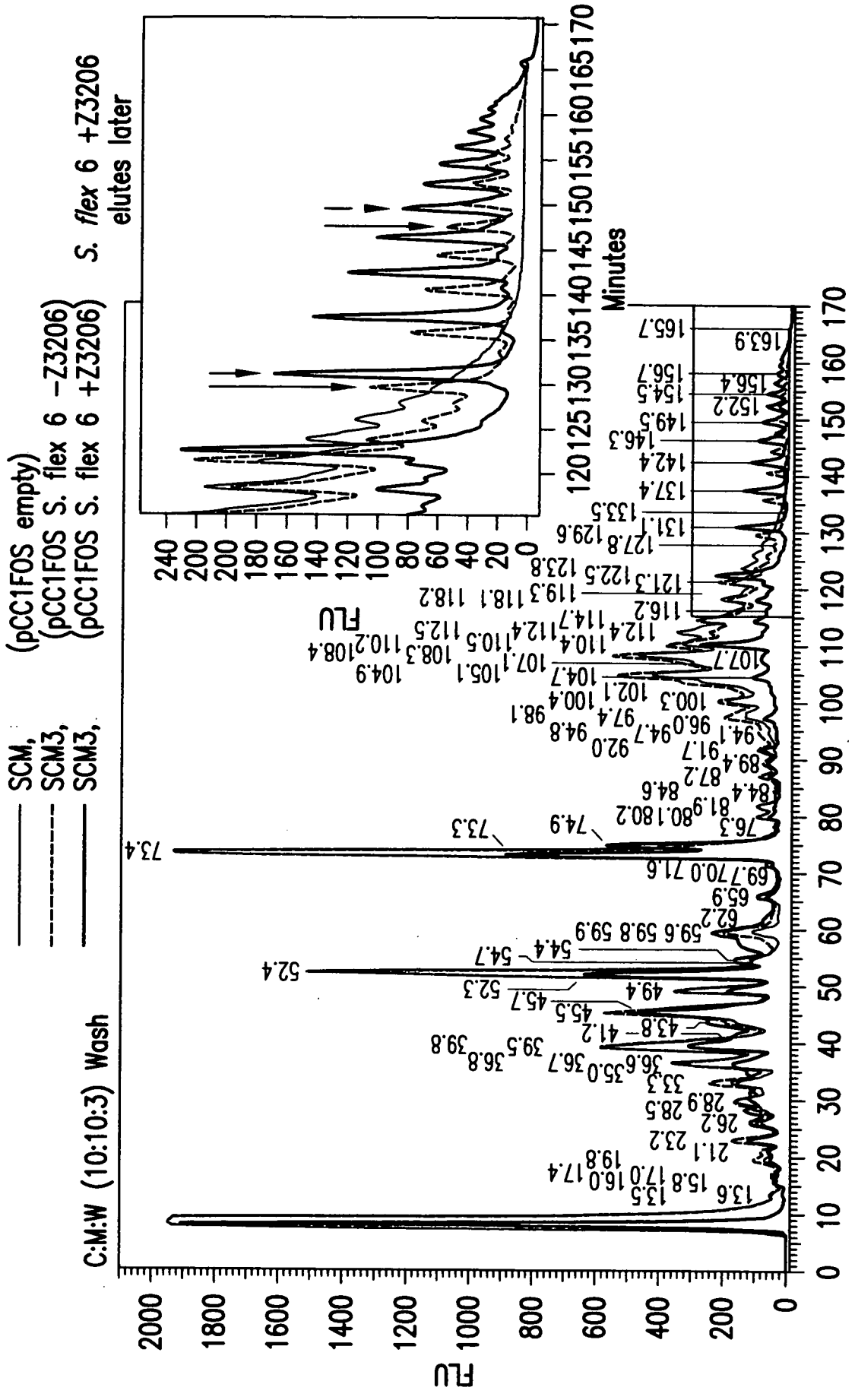
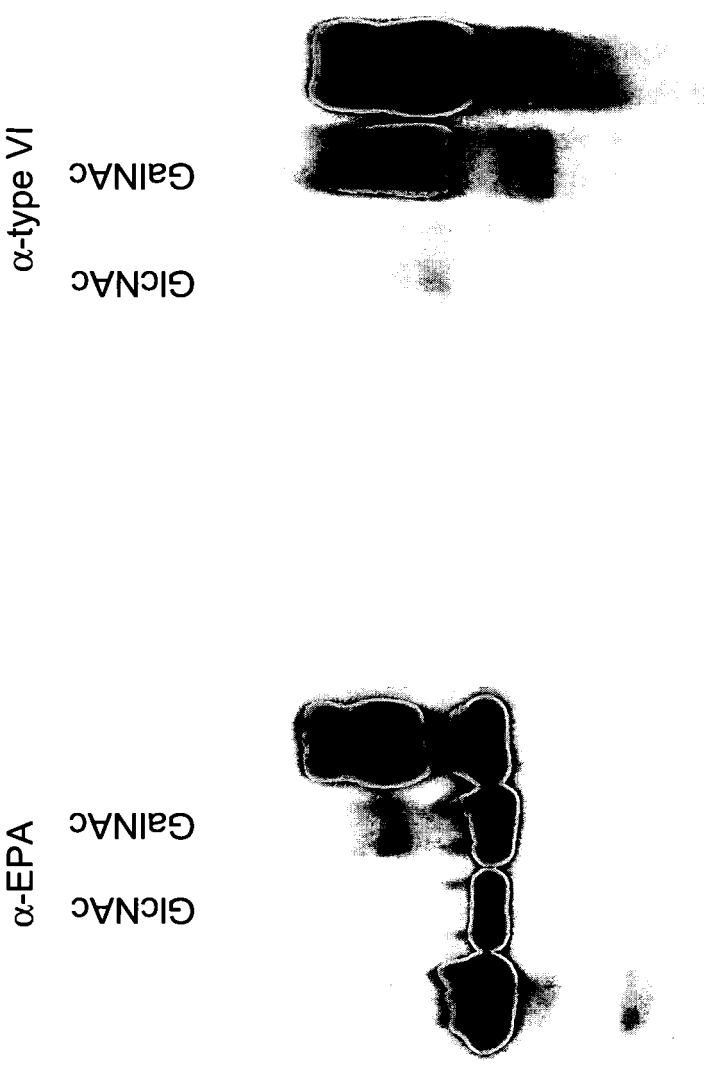

SCM,
SCM3, (pCC1FOS empty)
SCM3, (pCC1FOS S. flex 6 −Z3206)
(pCC1FOS S. flex 6 +Z3206)
S. flex 6 +Z3206 elutes later
C:M:W (10:10:3) Wash
FLU
Minutes

FIG. 12



	1	2	3	4
S.Flex 6 O-antigen	X	✓	✓	✓
Z3206	X	X	✓	✓
wzz	X	X	X	✓
EPA + pglB	✓	✓	✓	✓

	1	2	3	4
S.Flex 6 O-antigen	X	✓	✓	✓
Z3206	X	X	✓	✓
wzz	X	X	X	✓
EPA + pglB	✓	✓	✓	✓

FIG. 13