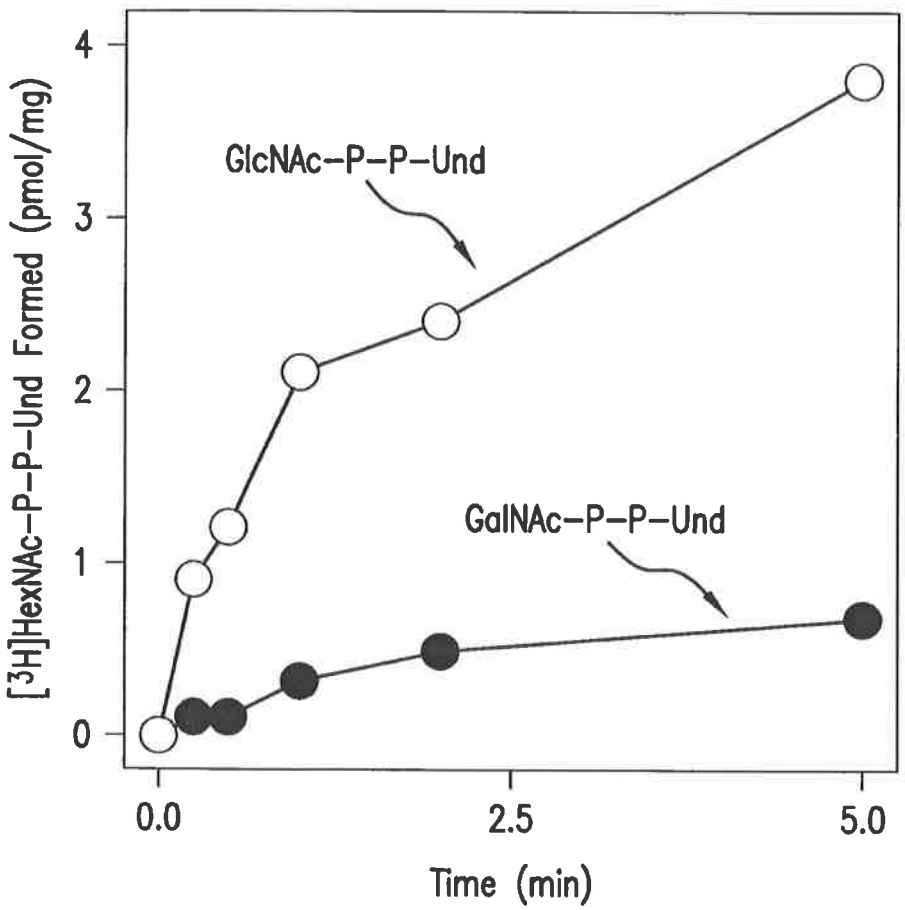

[3H]HexNAc-P-P-Und Formed (pmol/mg)
4
3
2
1
0
GlcNAc-P-P-Und
GalNAc-P-P-Und
0.0
2.5
5.0
Time (min)

FIG. 1

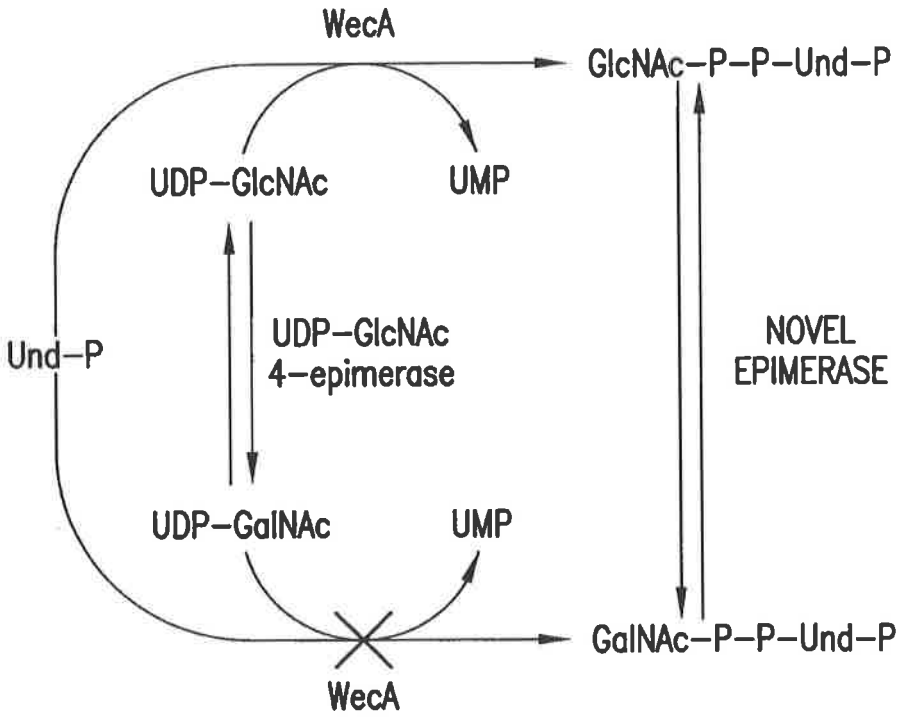

WecA
GlcNAc–P–P–Und–P
UDP–GlcNAc
UMP
Und–P
UDP–GlcNAc
4–epimerase
NOVEL
EPIMERASE
UDP–GalNAc
UMP
GalNAc–P–P–Und–P
WecA

FIG.2

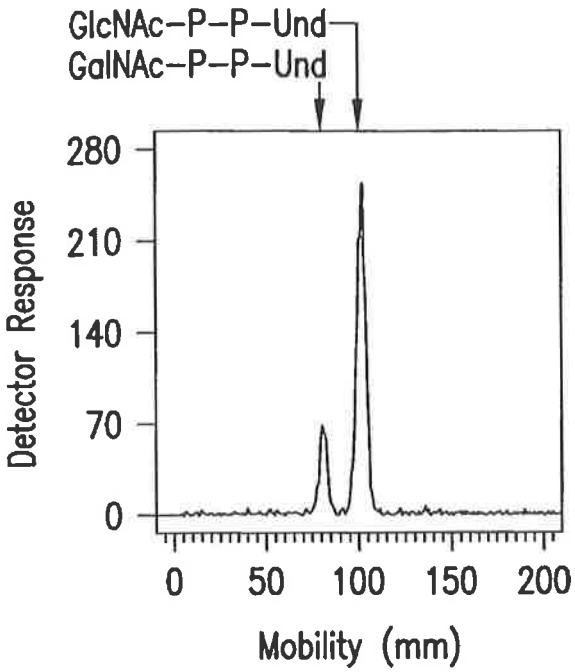



FIG.3A

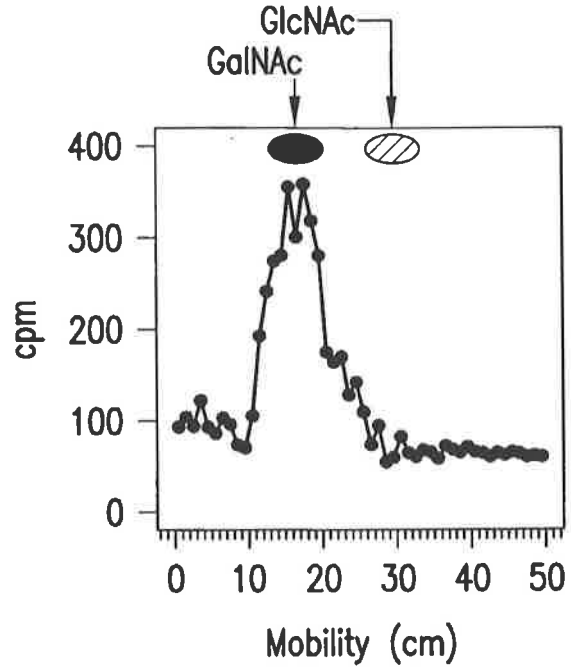



FIG.3C

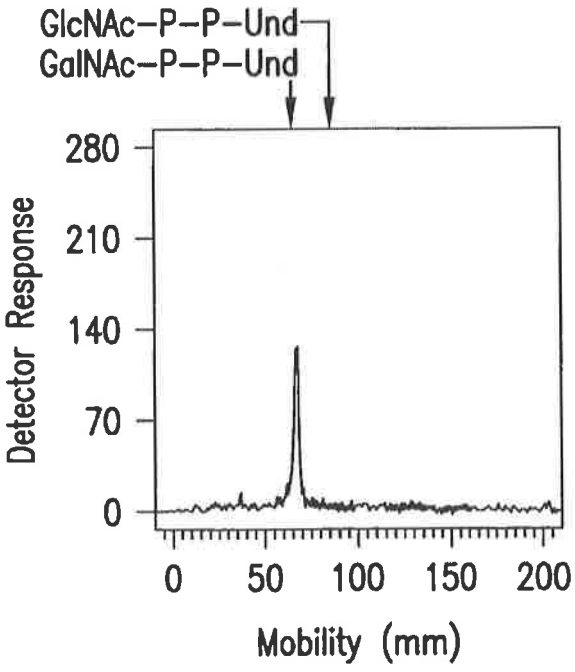



FIG.3B

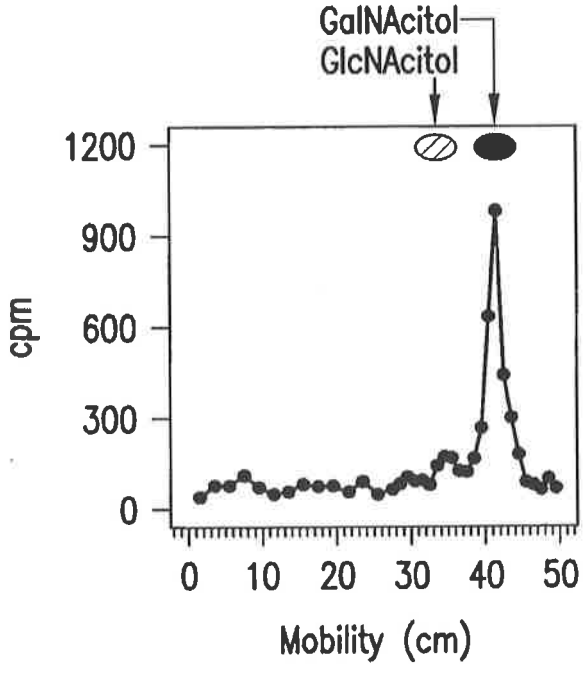



FIG.3D

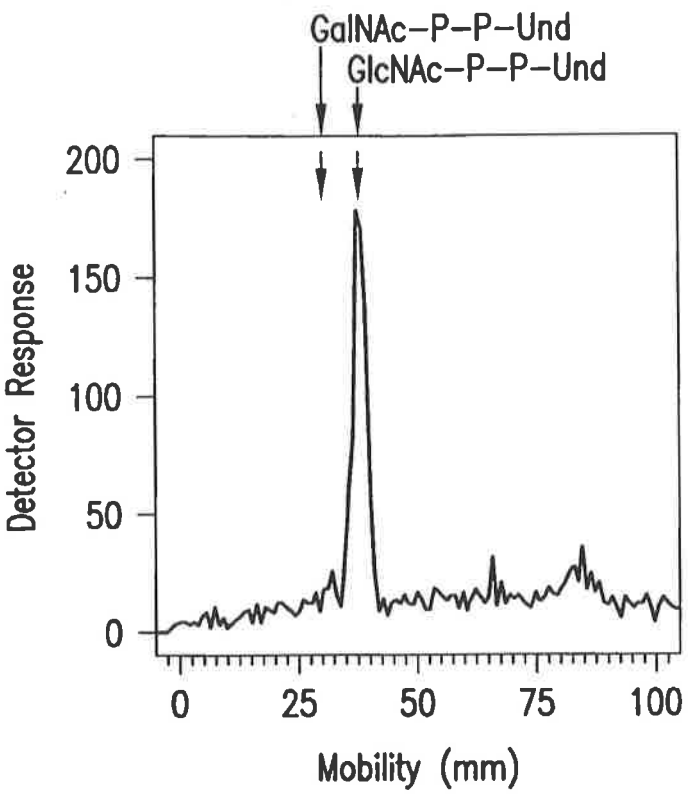

GalNAc–P–P–Und
GlcNAc–P–P–Und
200
150
100
50
0
Detector Response
0
25
50
75
100
Mobility (mm)

FIG.4A

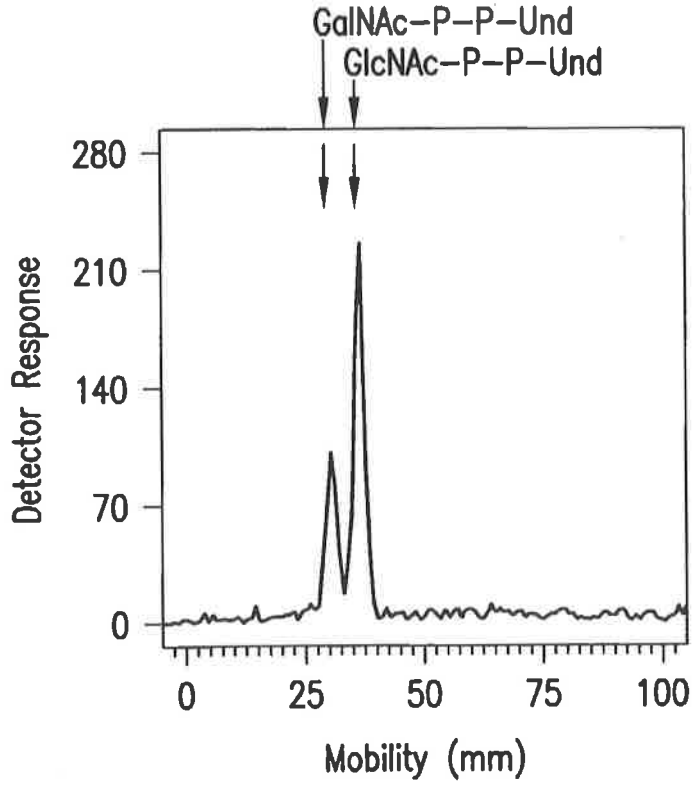

GalNAc–P–P–Und
GlcNAc–P–P–Und
280
210
140
70
0
Detector Response
0
25
50
75
100
Mobility (mm)

FIG.4B

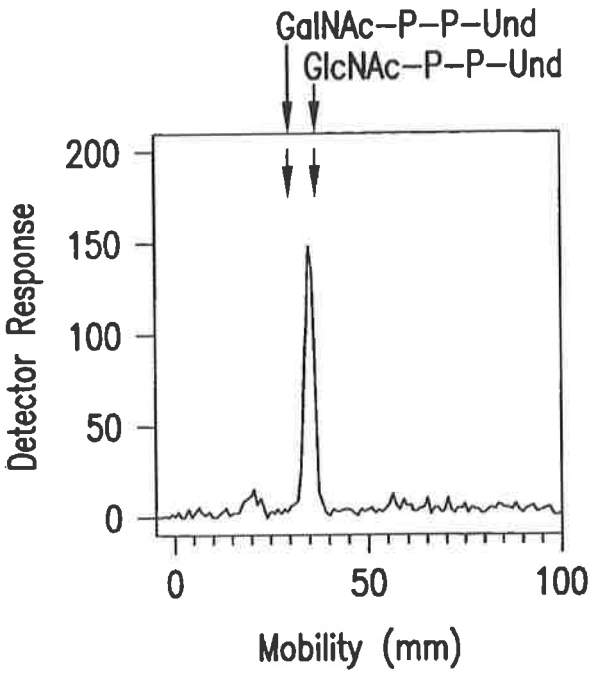



FIG.5A

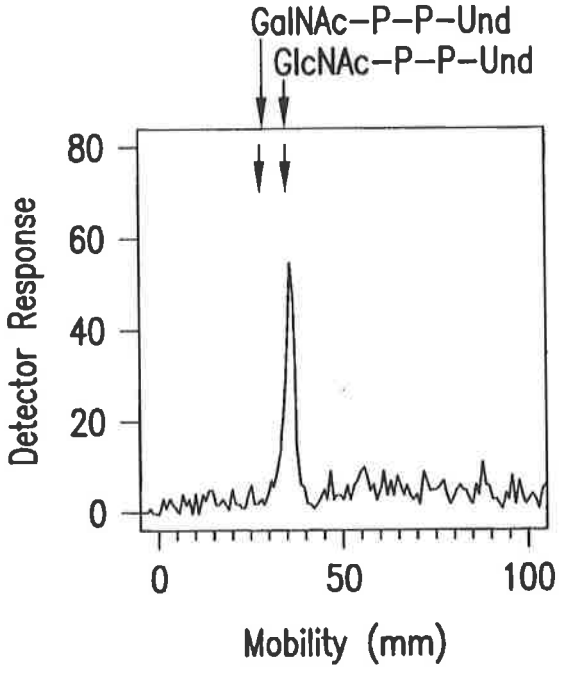



FIG.5C

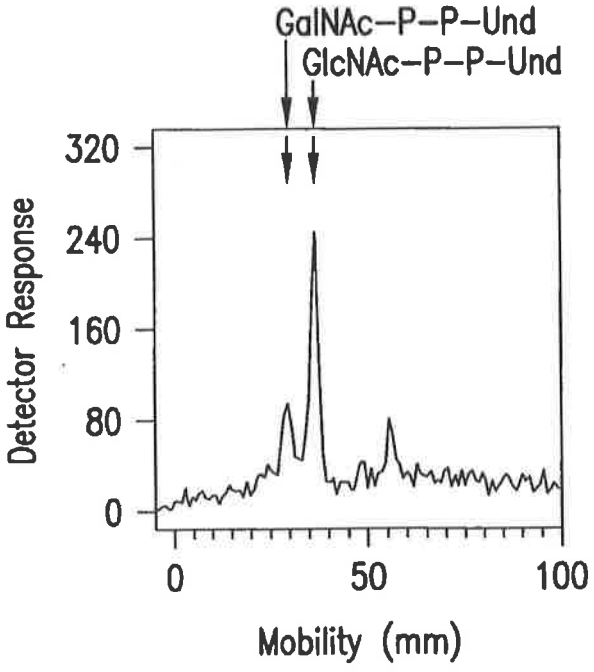



FIG.5B

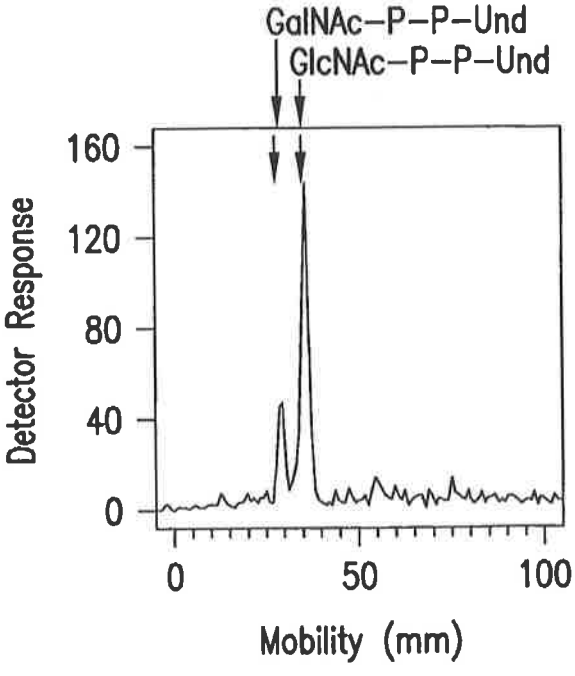



FIG.5D

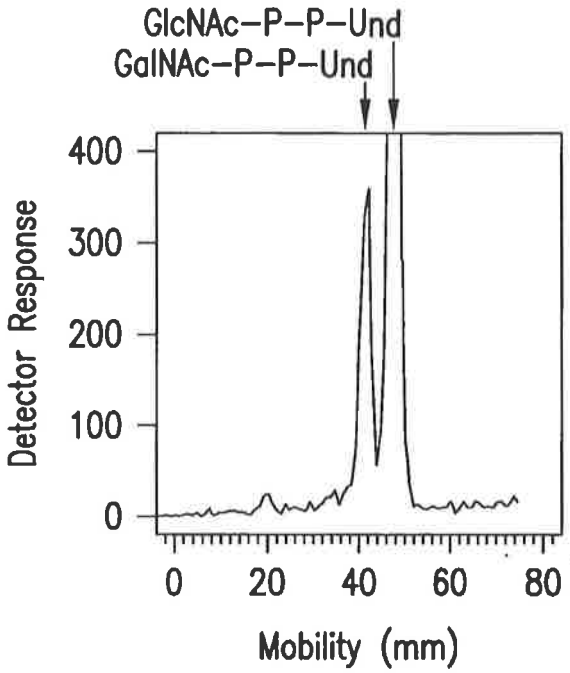



FIG.6A

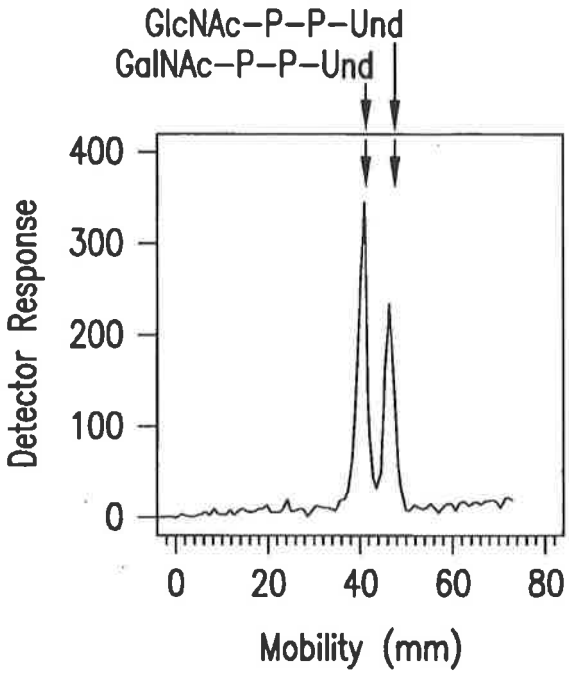



FIG.6B

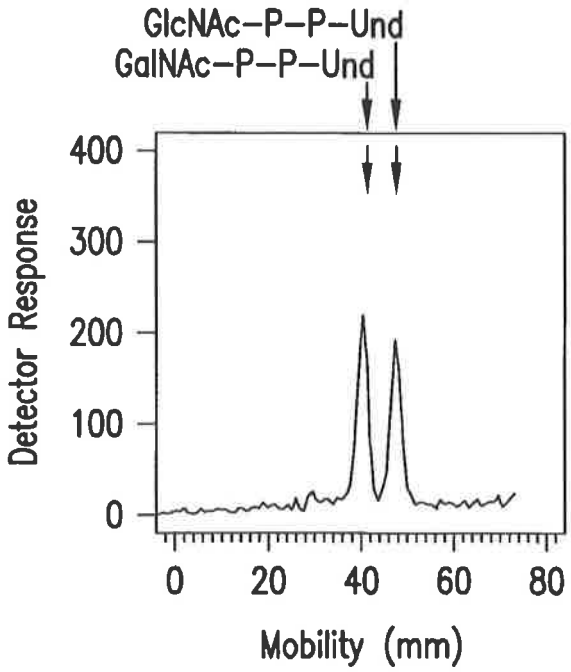



FIG.6C

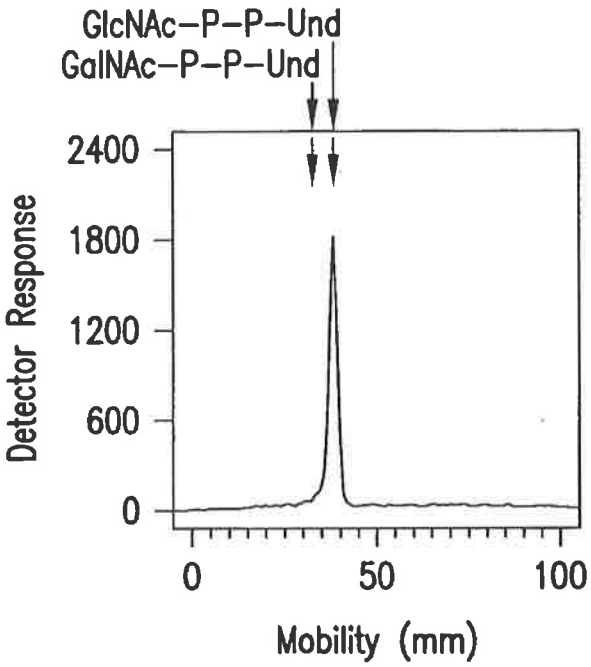



FIG.7A

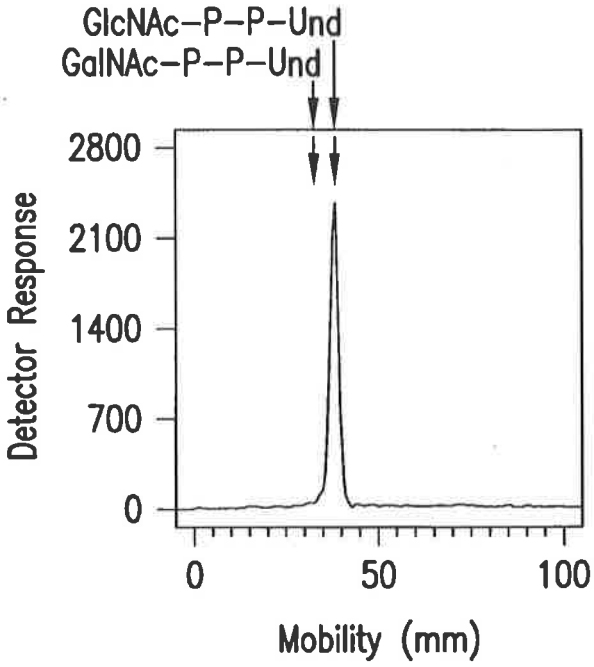



FIG.7B

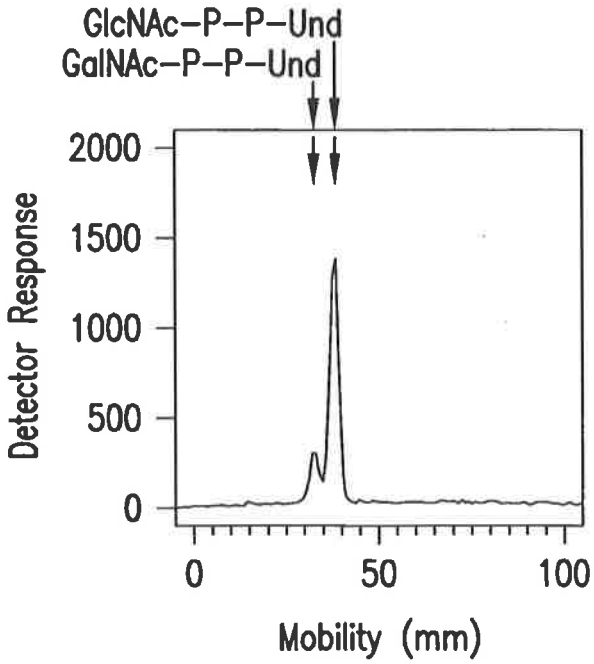



FIG.7C

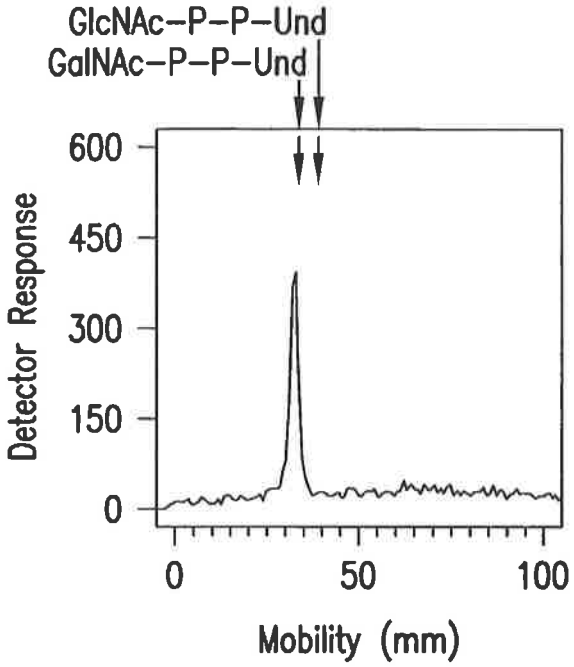



FIG.7D

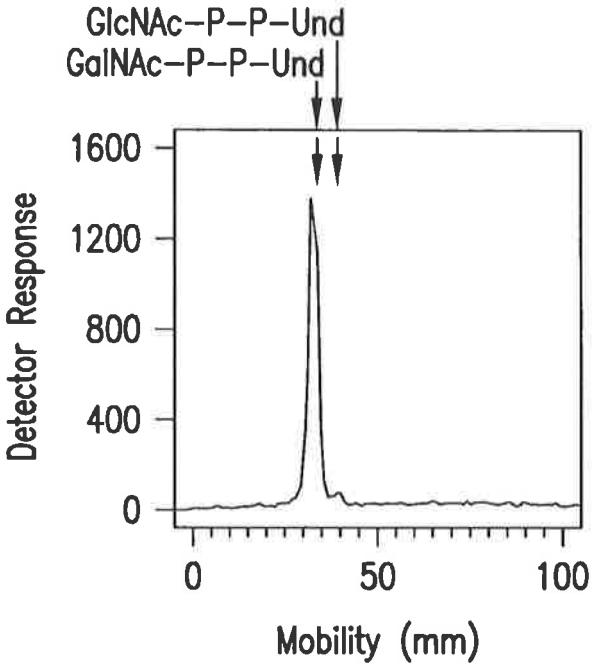



FIG.7E

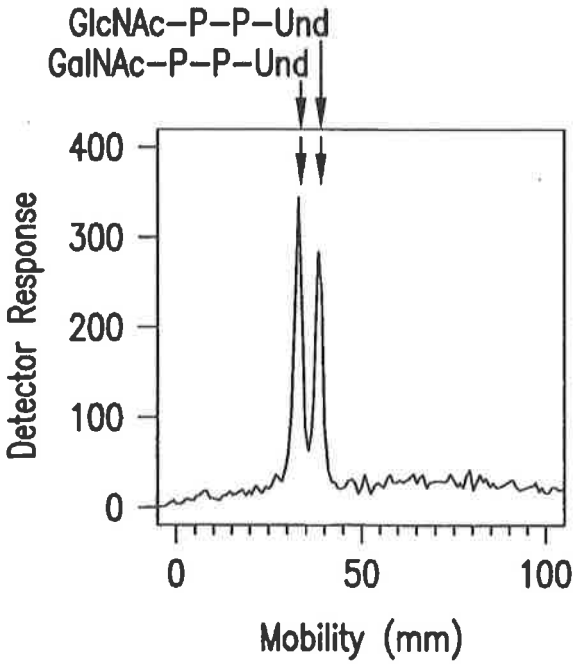



FIG.7F

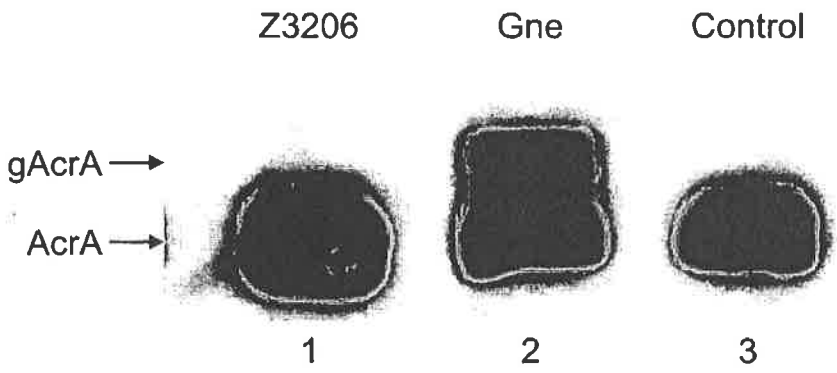



FIG.8

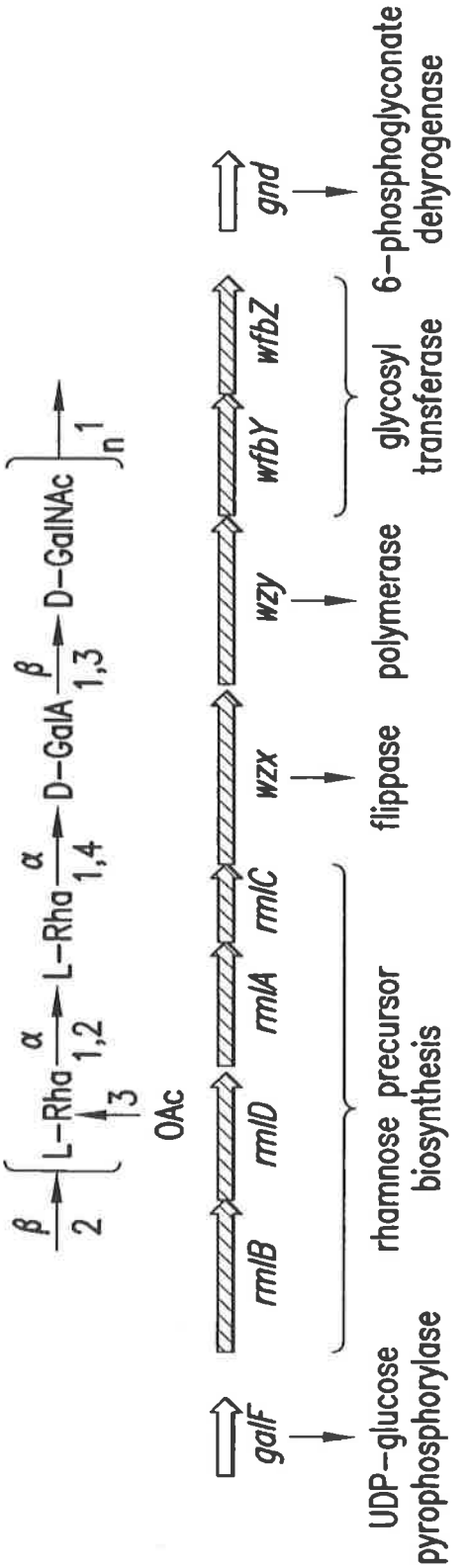

β
2
L-Rha
α
1,2
3
OAc
L-Rha
α
1,4
D-GalA
β
1,3
D-GalNAc
n
1
galF
rmlB
rmlD
rmlA
rmlC
wzx
wzy
wfbY
wfbZ
gnd
UDP-glucose pyrophosphorylase
rhamnose precursor biosynthesis
flippase
polymerase
glycosyl transferase
6-phosphoglyconate dehyrogenase

FIG.9

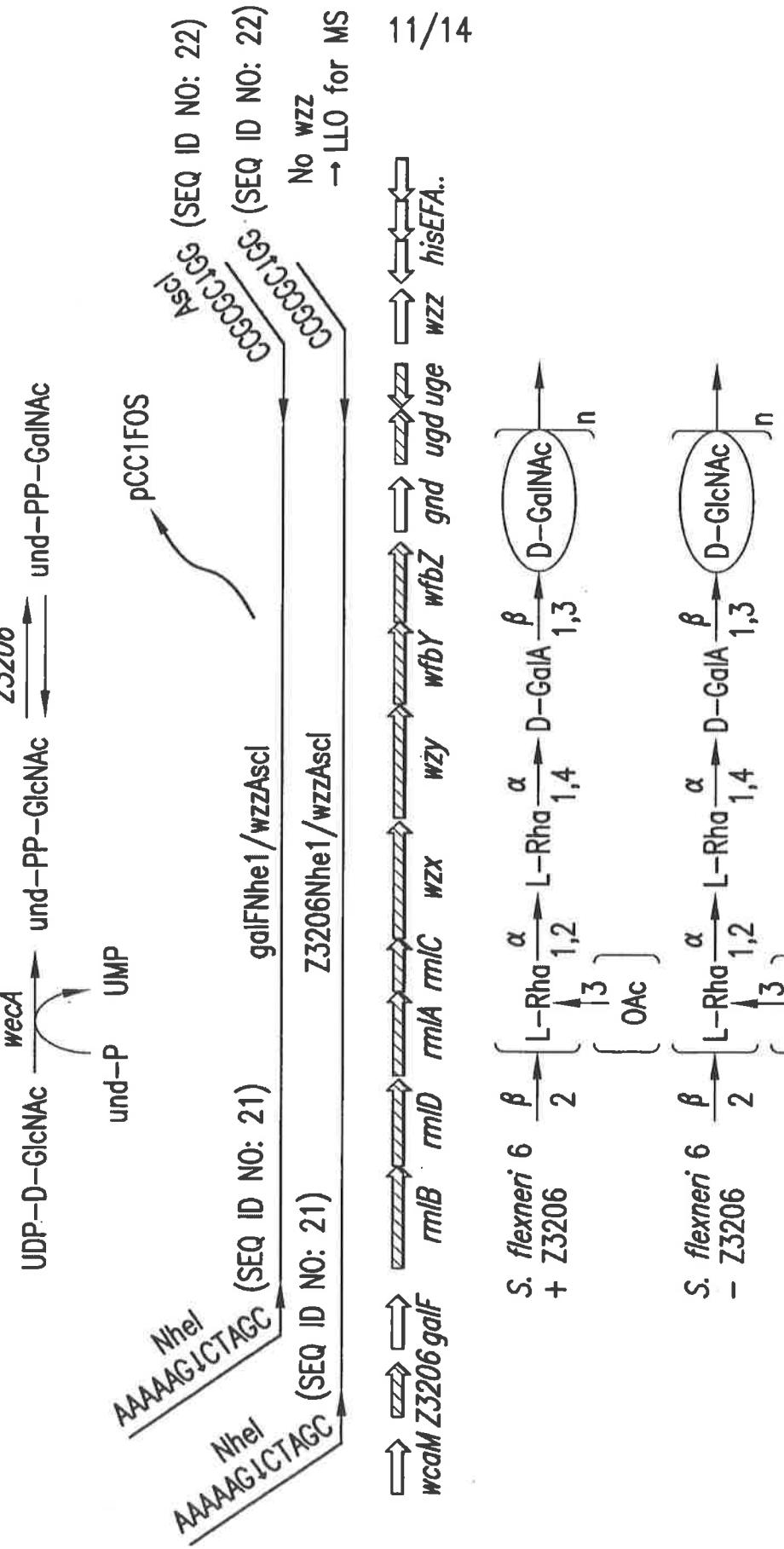

UDP–D–GlcNAc
wecA
und–P
UMP
und–PP–GlcNAc
Z3206
und–PP–GalNAc
pCC1FOS
NheI
AAAAAG↓CTAGC
(SEQ ID NO: 21)
galFNhe1/wzzAscI
CCGCGCGCC
AscI
(SEQ ID NO: 22)
Z3206Nhe1/wzzAscI
No wzz
→ LLO for MS
wcaM Z3206 galF
rmlB
rmlD
rmlA rmlC
wzx
wzy
wfbY
wfbZ
gnd
ugd uge
wzz
hisEFA..
S. flexneri 6
+ Z3206
S. flexneri 6
– Z3206
L–Rha
D–GalA
D–GalNAc
D–GlcNAc
OAc
n

FIG. 10

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

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

FIG. 11

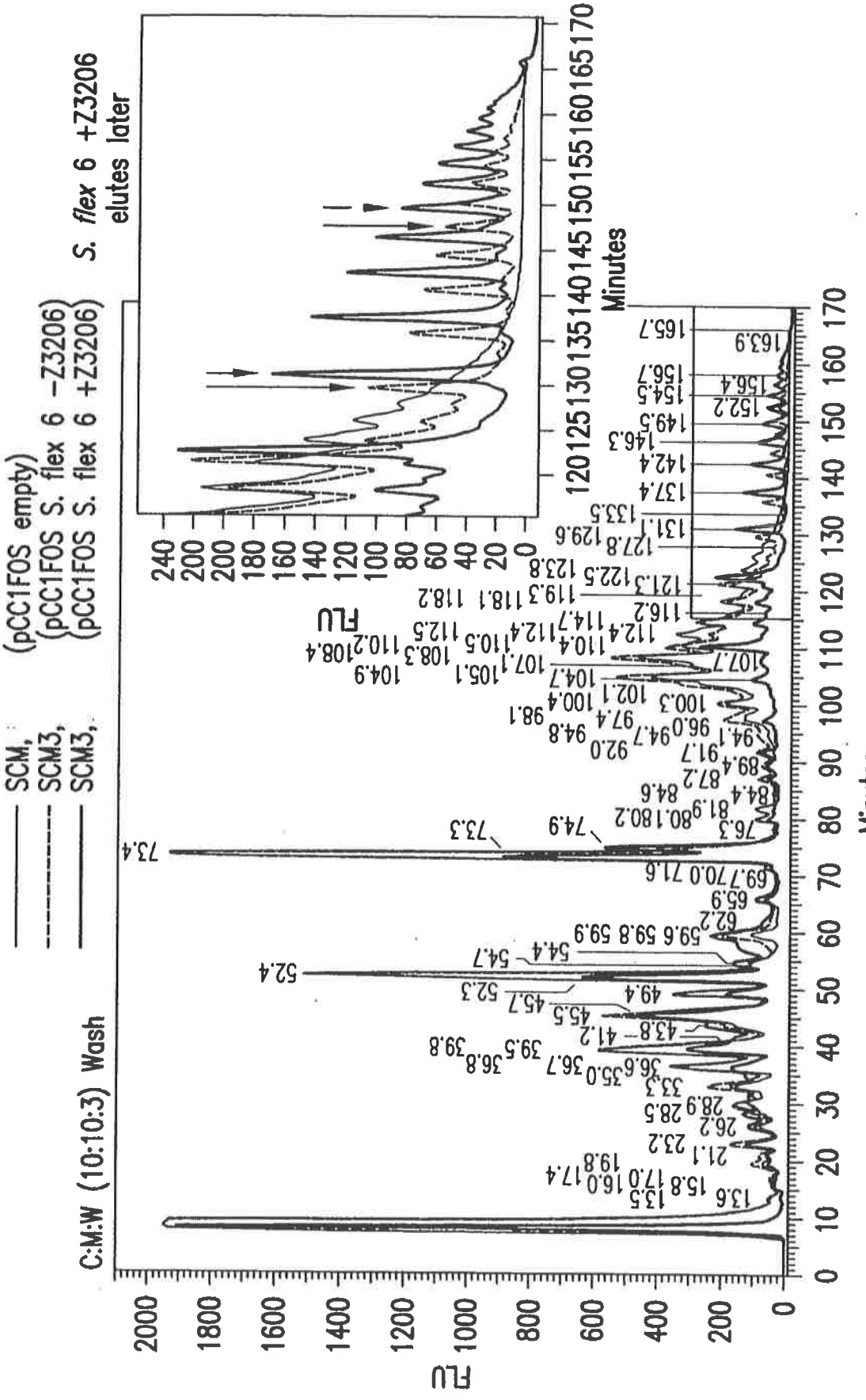

C:M:W (10:10:3) Wash
SCM, (pCC1FOS empty)
SCM3, (pCC1FOS S. flex 6 −Z3206)
SCM3, (pCC1FOS S. flex 6 +Z3206)
S. flex 6 +Z3206 elutes later
FLU
Minutes

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