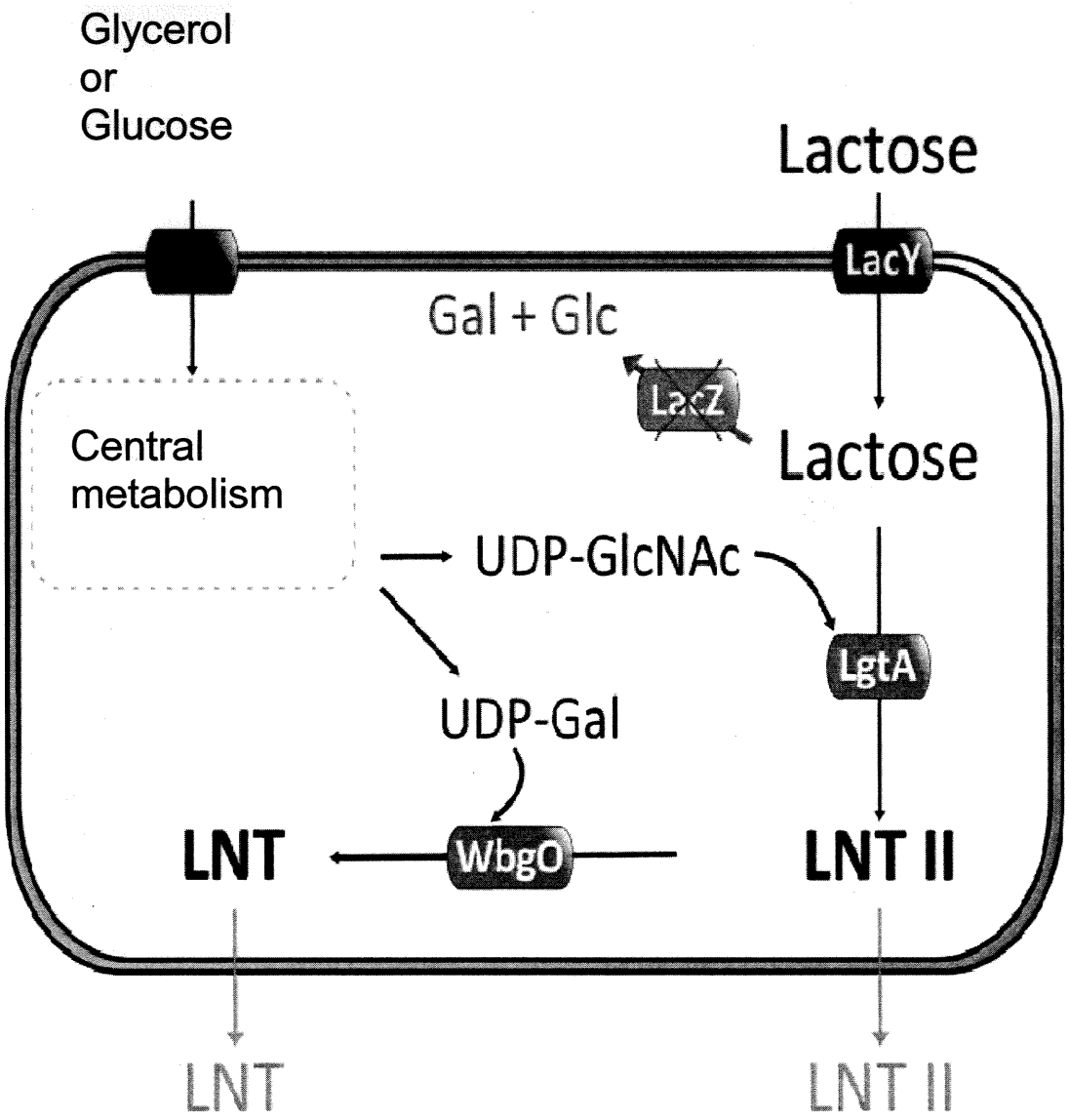

Glycerol
or
Glucose
Lactose
LacY
Gal + Glc
LacZ
Lactose
Central
metabolism
UDP-GlcNAc
LgtA
UDP-Gal
LNT
WbgO
LNT II
LNT
LNT II

Fig. 1

5

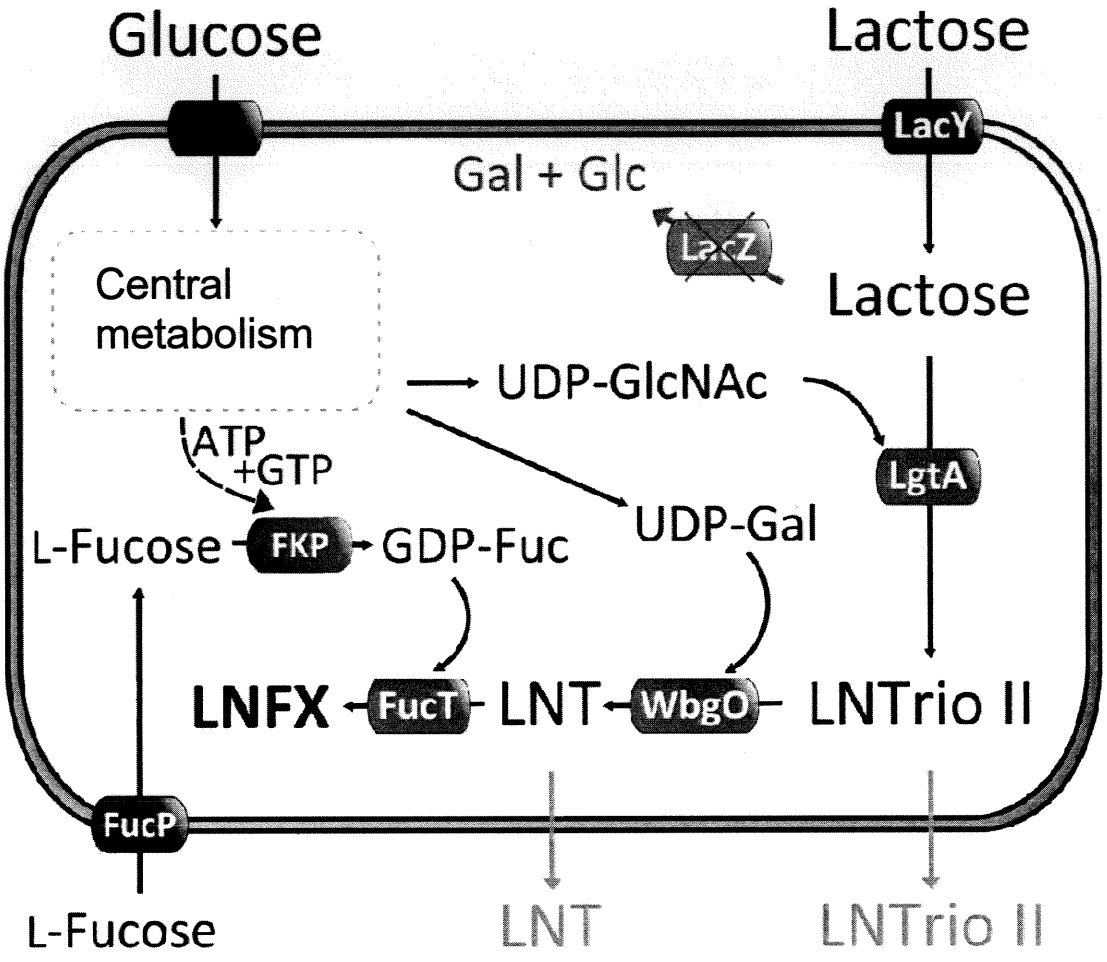

Glucose
Lactose
LacY
Gal + Glc
LacZ
Central metabolism
Lactose
UDP-GlcNAc
ATP +GTP
LgtA
UDP-Gal
L-Fucose
FKP
GDP-Fuc
LNFX
FucT
LNT
WbgO
LNTrio II
FucP
L-Fucose
LNT
LNTrio II

Fig. 2

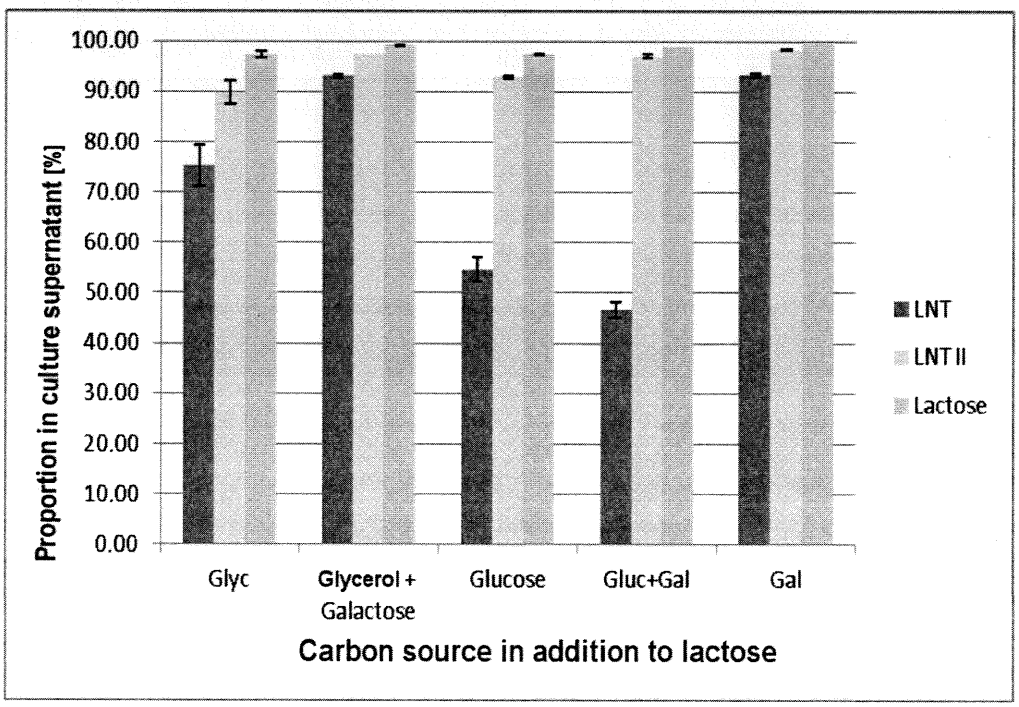

100.00
90.00
80.00
70.00
60.00
50.00
40.00
30.00
20.00
10.00
0.00
Proportion in culture supernatant [%]
LNT
LNT II
Lactose
Glyc
Glycerol + Galactose
Glucose
Gluc+Gal
Gal
Carbon source in addition to lactose

Fig. 3

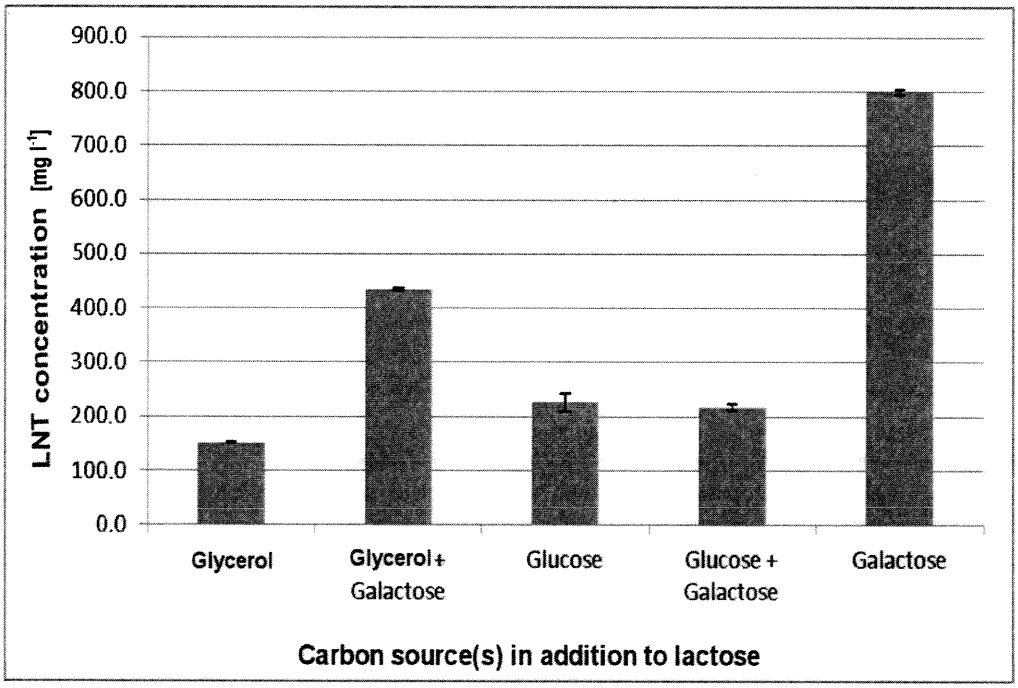

900.0
800.0
700.0
600.0
500.0
400.0
300.0
200.0
100.0
0.0
LNT concentration [mg l-1]
Glycerol
Glycerol + Galactose
Glucose
Glucose + Galactose
Galactose
Carbon source(s) in addition to lactose

Fig. 4

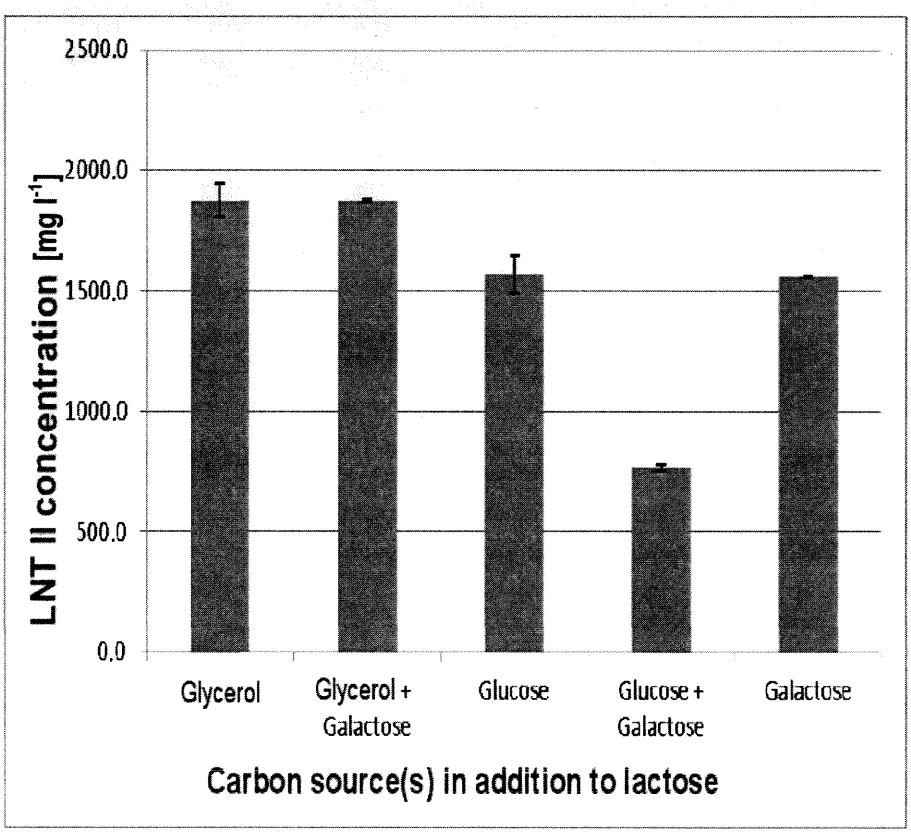

2500.0
2000.0
1500.0
1000.0
500.0
0.0
LNT II concentration [mg l-1]
Glycerol
Glycerol + Galactose
Glucose
Glucose + Galactose
Galactose
Carbon source(s) in addition to lactose

Fig. 5

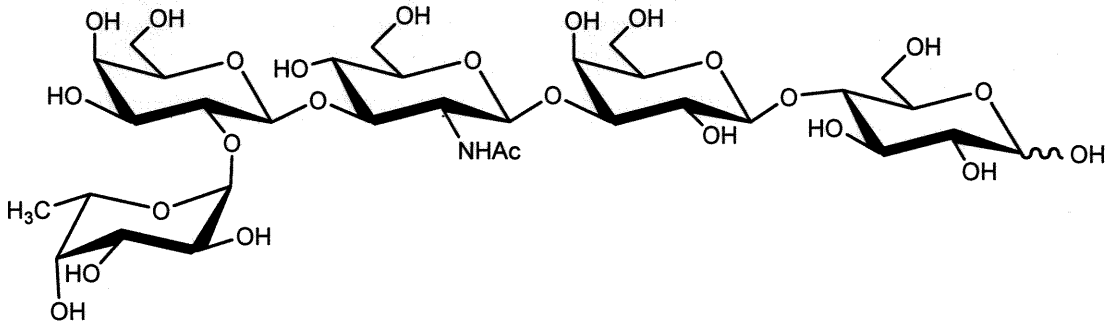


Fig. 6

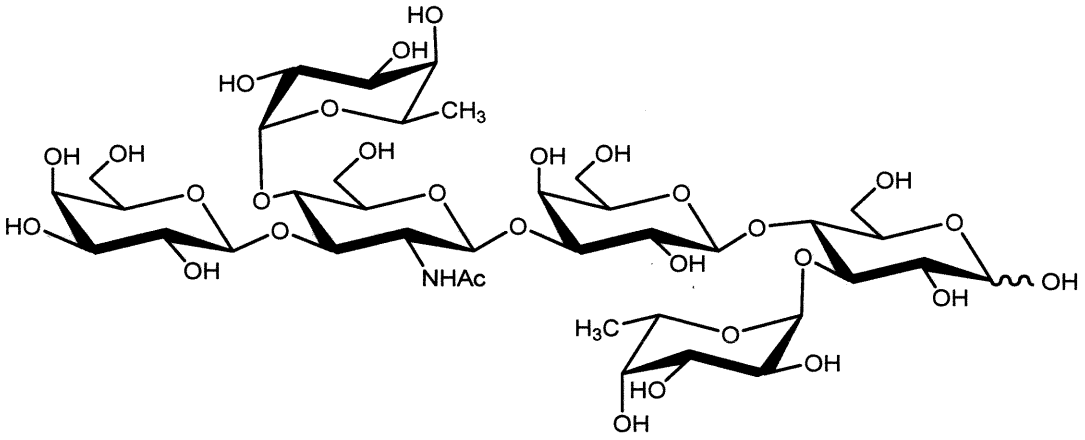


Fig. 7

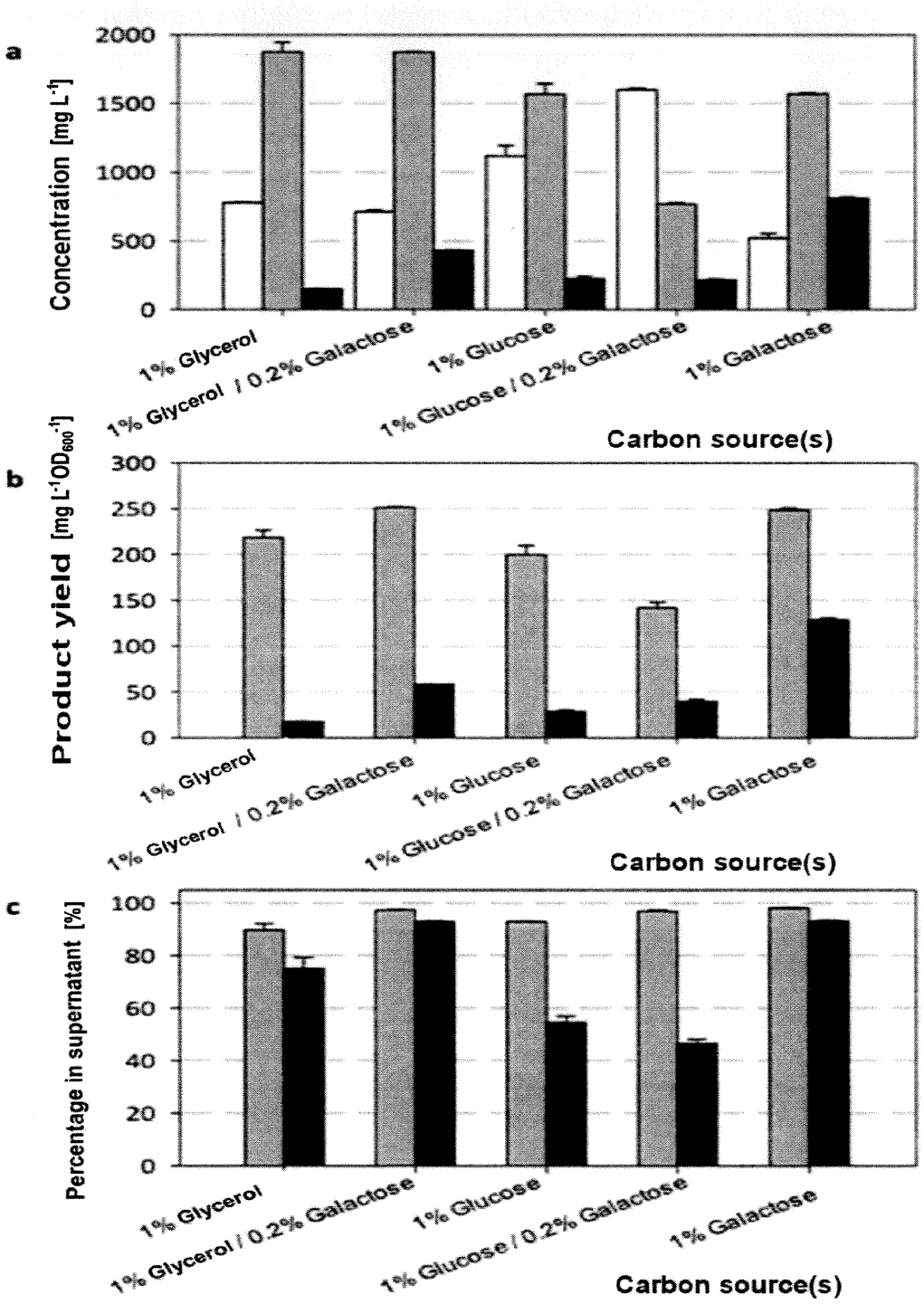

a
Concentration [mg L-1]
2000
1500
1000
500
0
1% Glycerol
1% Glycerol / 0.2% Galactose
1% Glucose
1% Glucose / 0.2% Galactose
1% Galactose
Carbon source(s)
b
Product yield [mg L-1OD600-1]
300
250
200
150
100
50
0
1% Glycerol
1% Glycerol / 0.2% Galactose
1% Glucose
1% Glucose / 0.2% Galactose
1% Galactose
Carbon source(s)
c
Percentage in supernatant [%]
100
80
60
40
20
0
1% Glycerol
1% Glycerol / 0.2% Galactose
1% Glucose
1% Glucose / 0.2% Galactose
1% Galactose
Carbon source(s)

Fig. 8

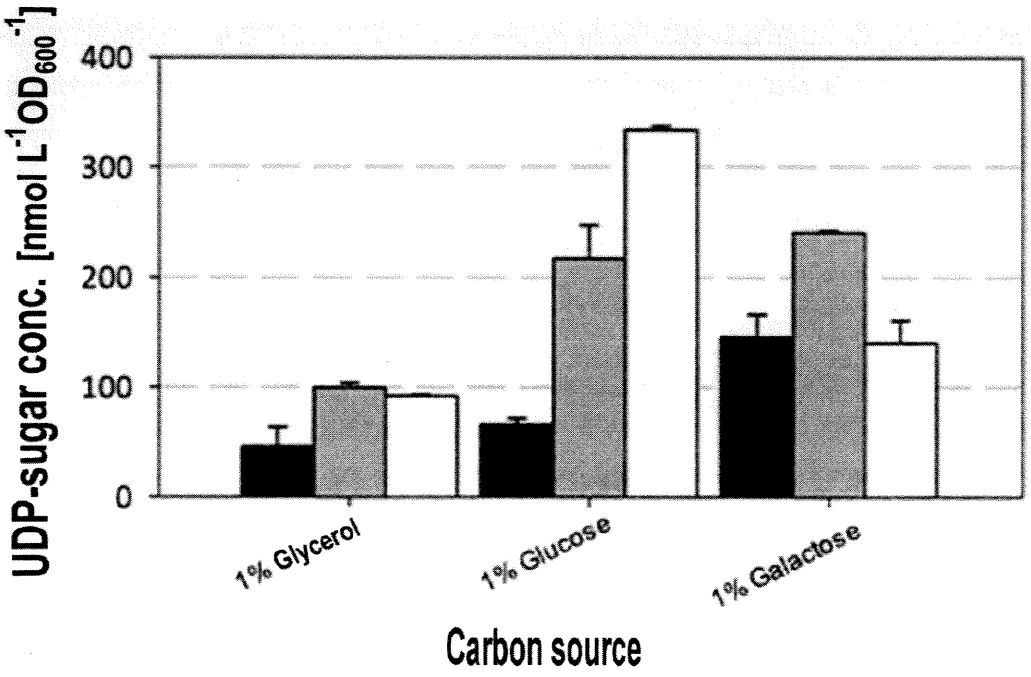

UDP-sugar conc. [nmol L-1OD600-1]
400
300
200
100
0
1% Glycerol
1% Glucose
1% Galactose
Carbon source

Fig. 9

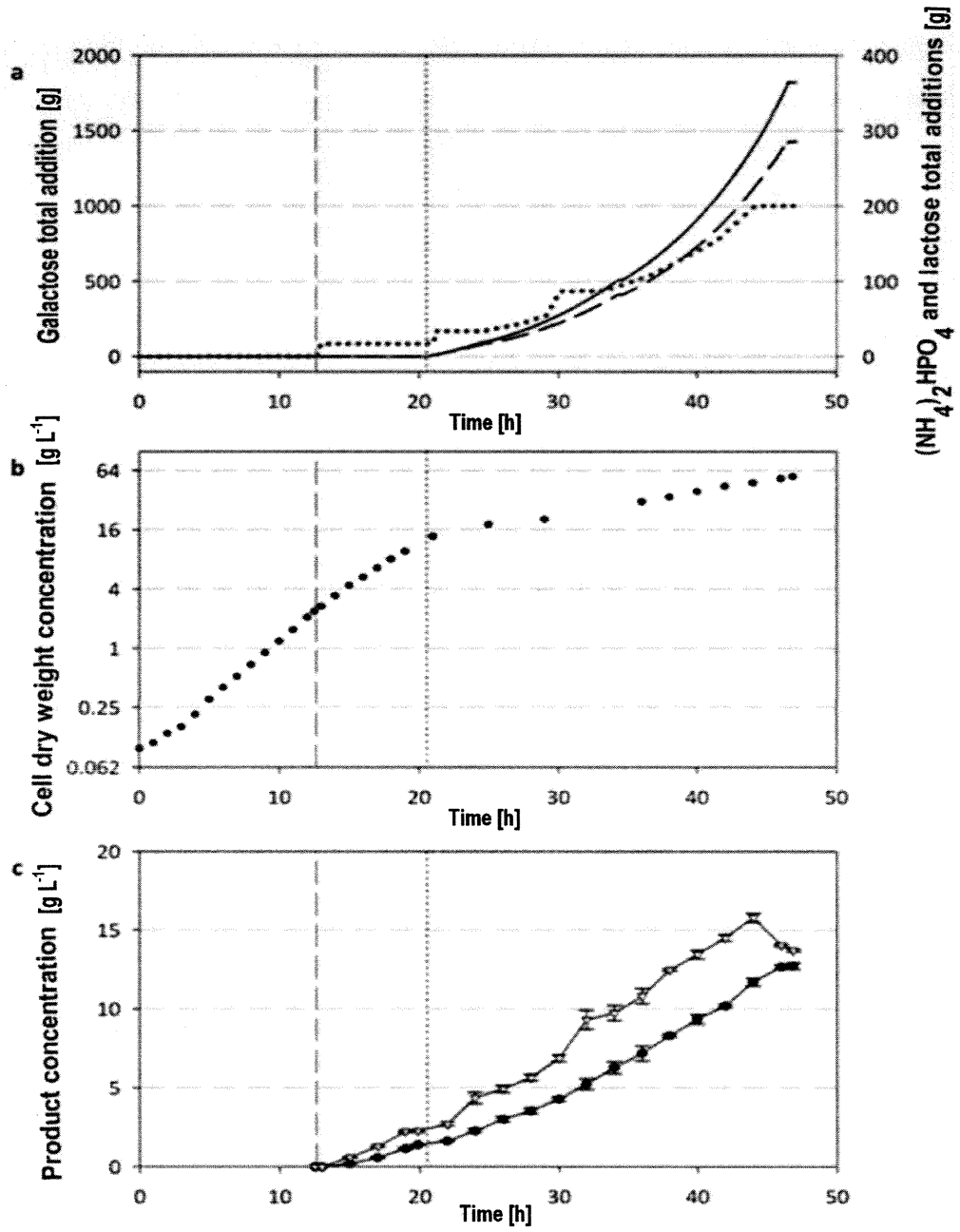

a
Galactose total addition [g]
2000
1500
1000
500
0
400
300
200
100
0
0
10
20
30
40
50
Time [h]
$(NH_4)_2HPO_4$ and lactose total additions [g]
b
Cell dry weight concentration [g L^{-1}]
64
16
4
1
0.25
0.062
0
10
20
30
40
50
Time [h]
c
Product concentration [g L^{-1}]
20
15
10
5
0
0
10
20
30
40
50
Time [h]

Fig. 10

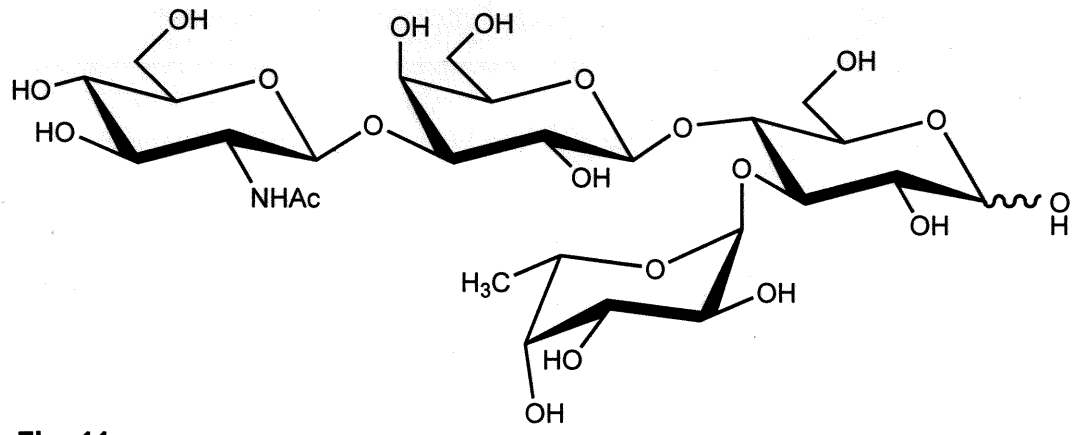

OH
HO
HO
O
NHAc
OH
OH
OH
O
OH
OH
O
O
O
OH
O
OH
H
O
H3C
OH
HO
OH

Fig. 11

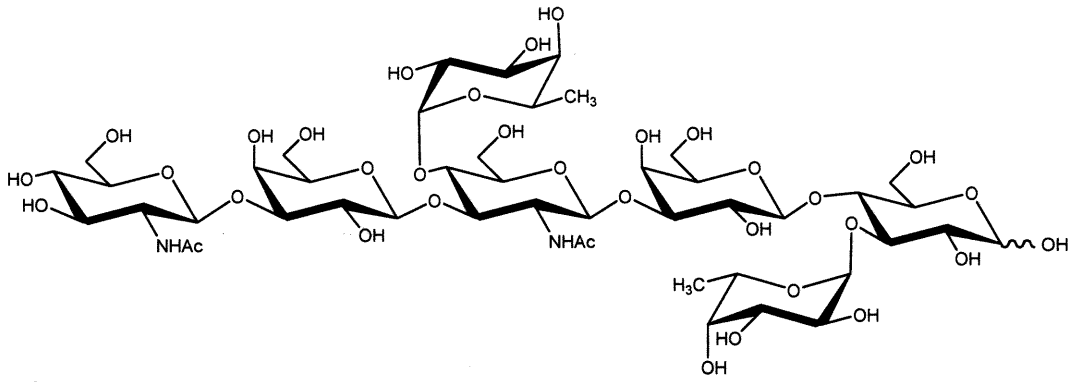

HO
OH
HO
O
CH3
OH
OH
OH
OH
OH
HO
HO
O
NHAc
OH
NHAc
OH
OH
OH
OH
H3C
O
OH
HO
OH

Fig. 12