Fig. 1

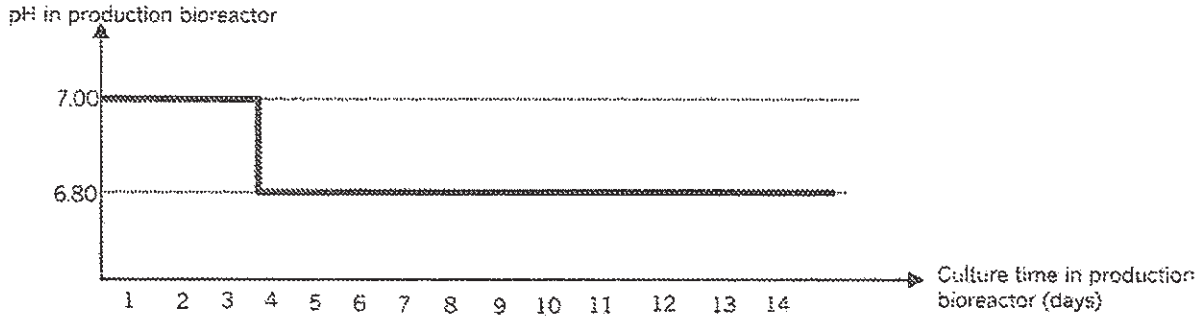


Fig. 2A

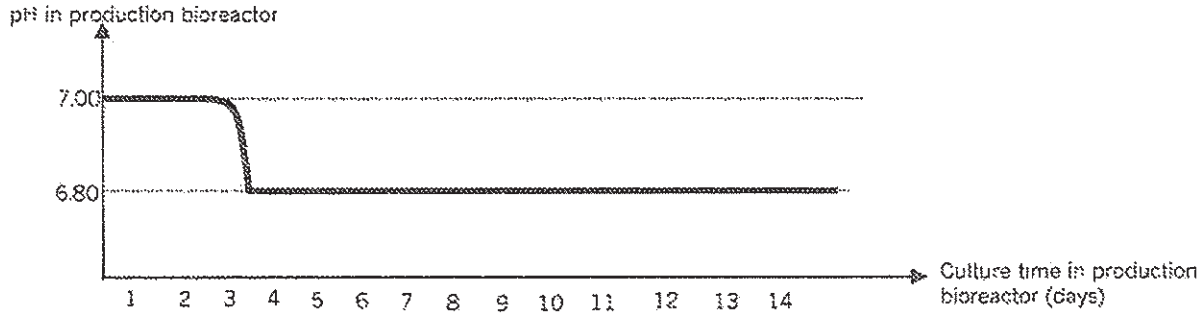


Fig. 2B

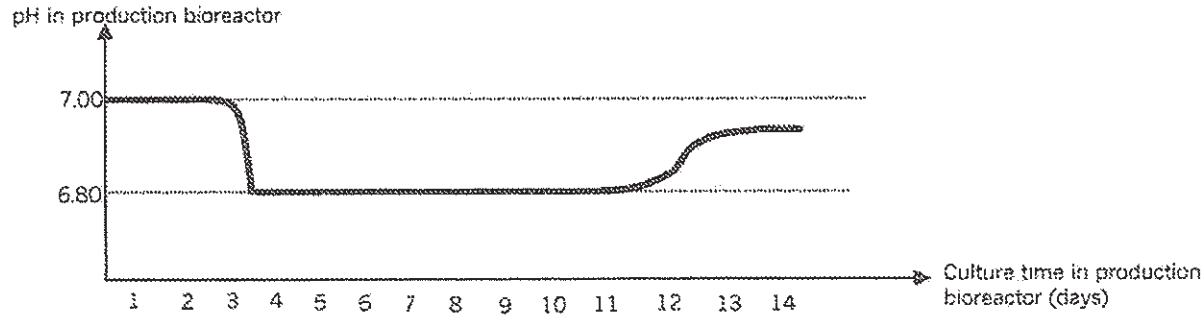


Fig. 2C

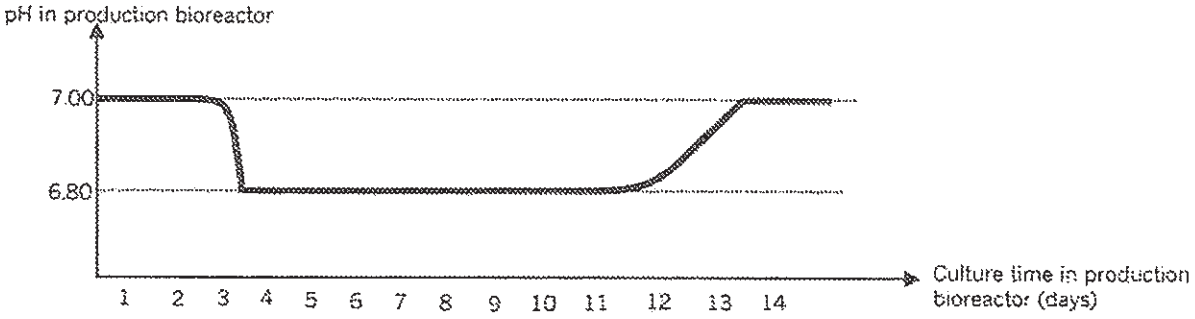

pH in production bioreactor
7.00
6.80
1 2 3 4 5 6 7 8 9 10 11 12 13 14
Culture time in production bioreactor (days)

Fig. 3

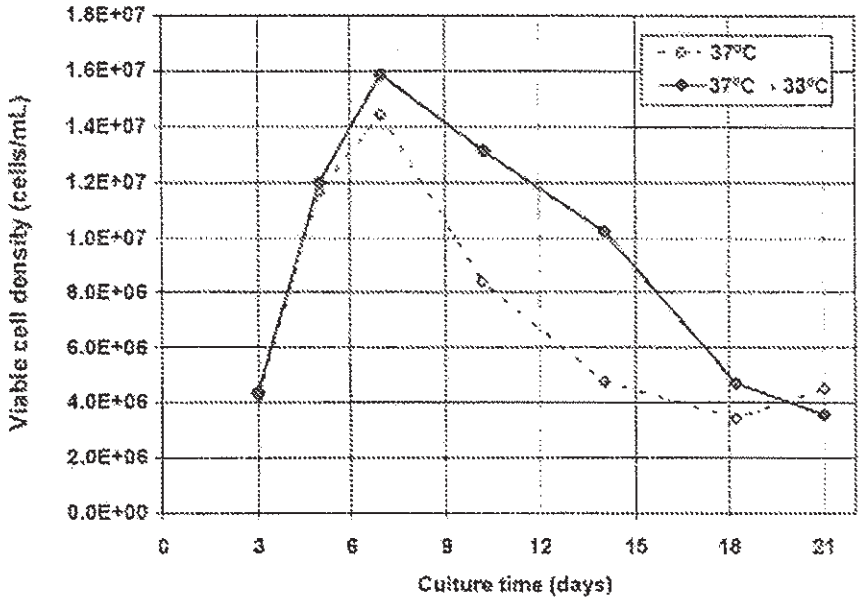

1.8E+07
1.6E+07
1.4E+07
1.2E+07
1.0E+07
8.0E+06
6.0E+06
4.0E+06
2.0E+06
0.0E+00
Viable cell density (cells/mL)
0 3 6 9 12 15 18 21
Culture time (days)
37°C
37°C › 33°C

Fig. 4

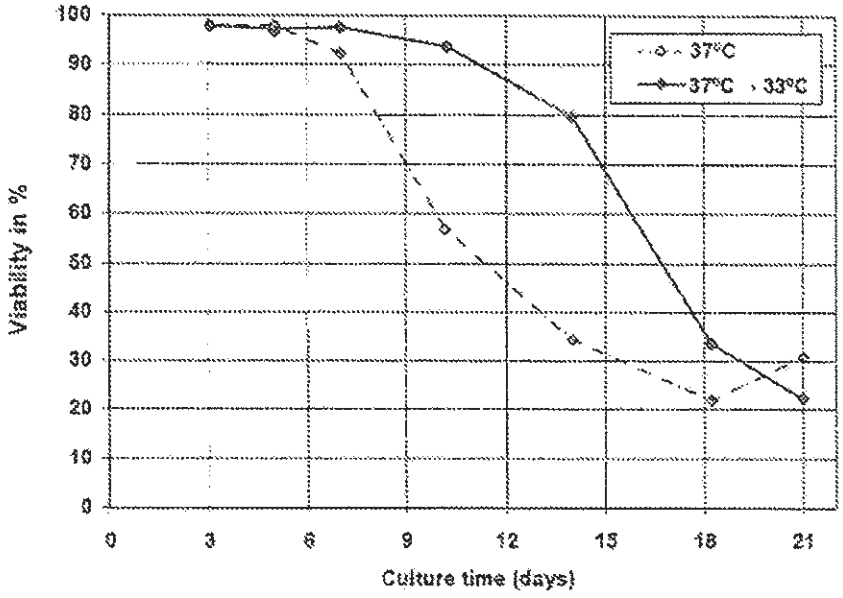

37°C
37°C › 33°C
Viability in %
Culture time (days)
0
10
20
30
40
50
60
70
80
90
100
0
3
6
9
12
15
18
21

Fig. 5

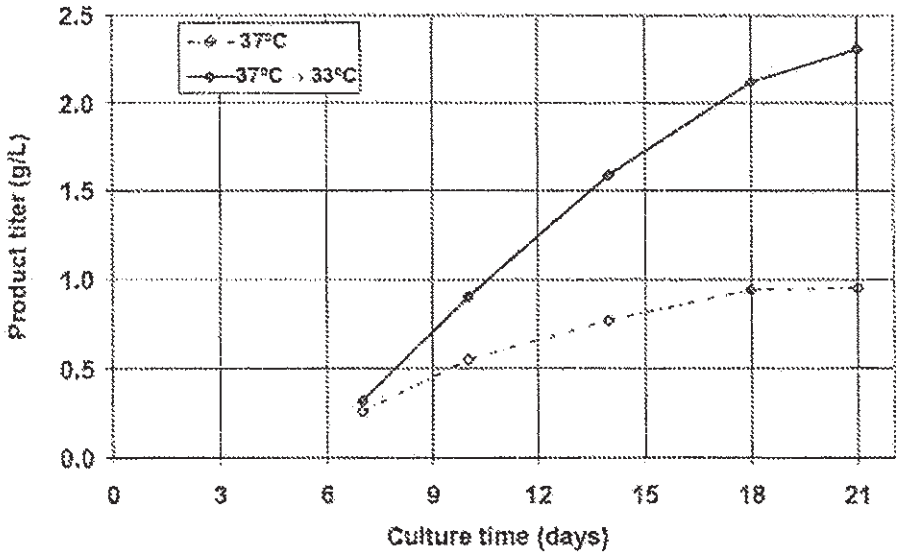

37°C
37°C › 33°C
Product titer (g/L)
Culture time (days)
0.0
0.5
1.0
1.5
2.0
2.5
0
3
6
9
12
15
18
21

Fig. 6

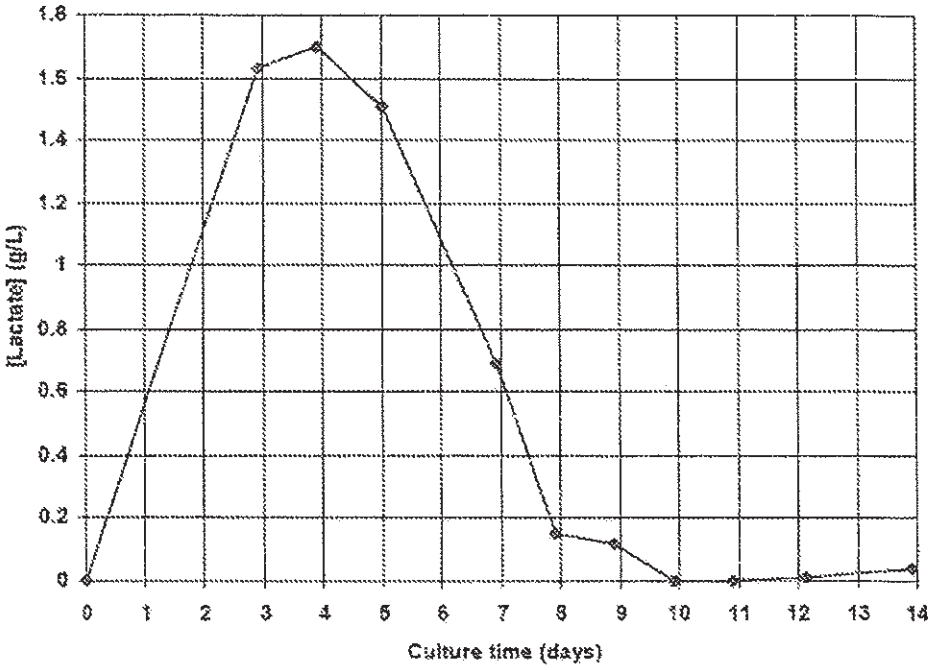

[Lactate] (g/L)
1.8
1.6
1.4
1.2
1
0.8
0.6
0.4
0.2
0
0 1 2 3 4 5 6 7 8 9 10 11 12 13 14
Culture time (days)

Fig. 7

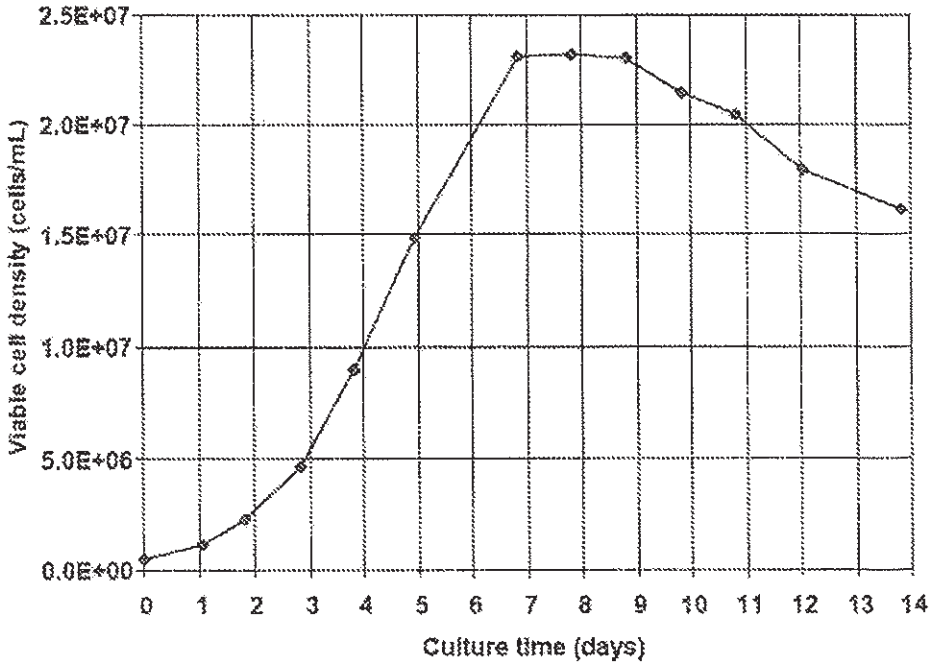

Viable cell density (cells/mL)
2.5E+07
2.0E+07
1.5E+07
1.0E+07
5.0E+06
0.0E+00
0 1 2 3 4 5 6 7 8 9 10 11 12 13 14
Culture time (days)

Fig. 8

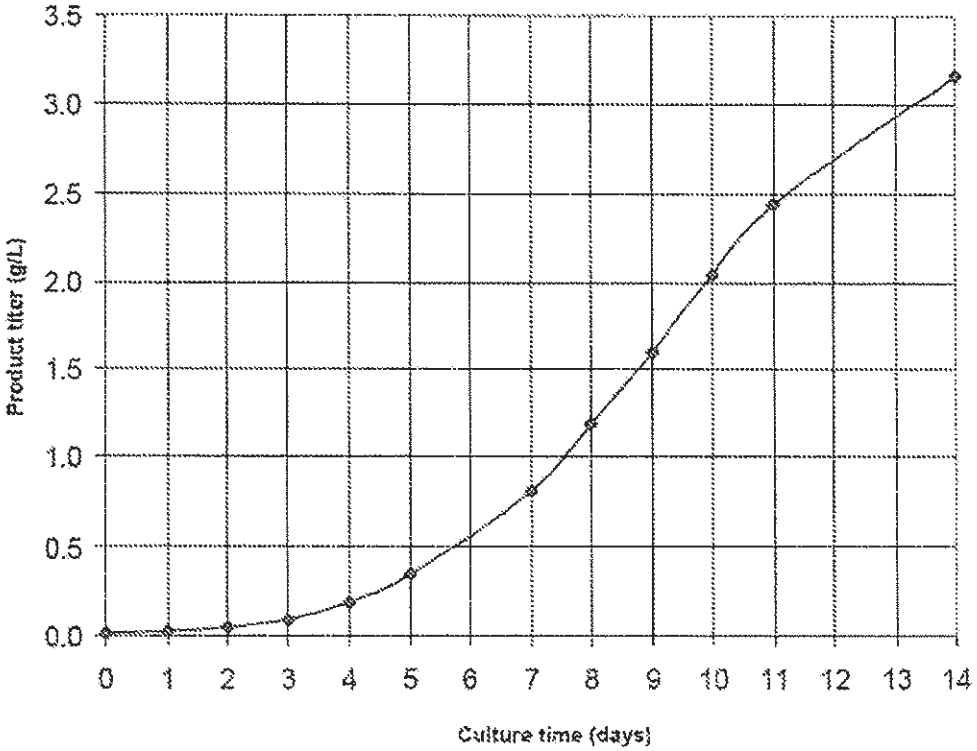
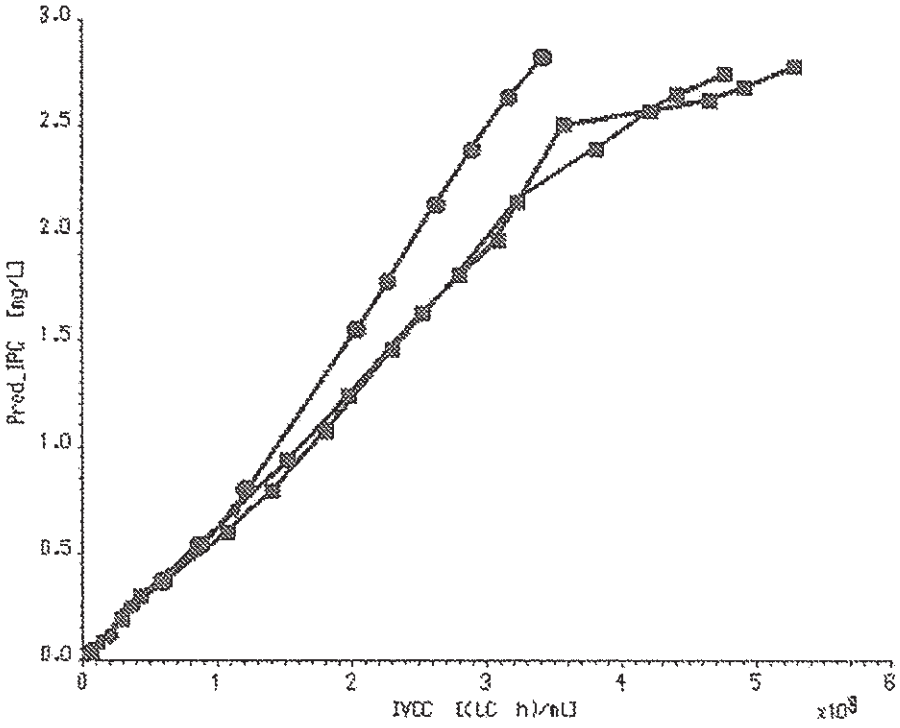

Product titer (g/L)
3.5
3.0
2.5
2.0
1.5
1.0
0.5
0.0
0 1 2 3 4 5 6 7 8 9 10 11 12 13 14
Culture time (days)

Fig. 9



- Experiment 1 (with pH shift)
- Experiment 2 (without pH shift)
- Experiment 3 (without pH shift)