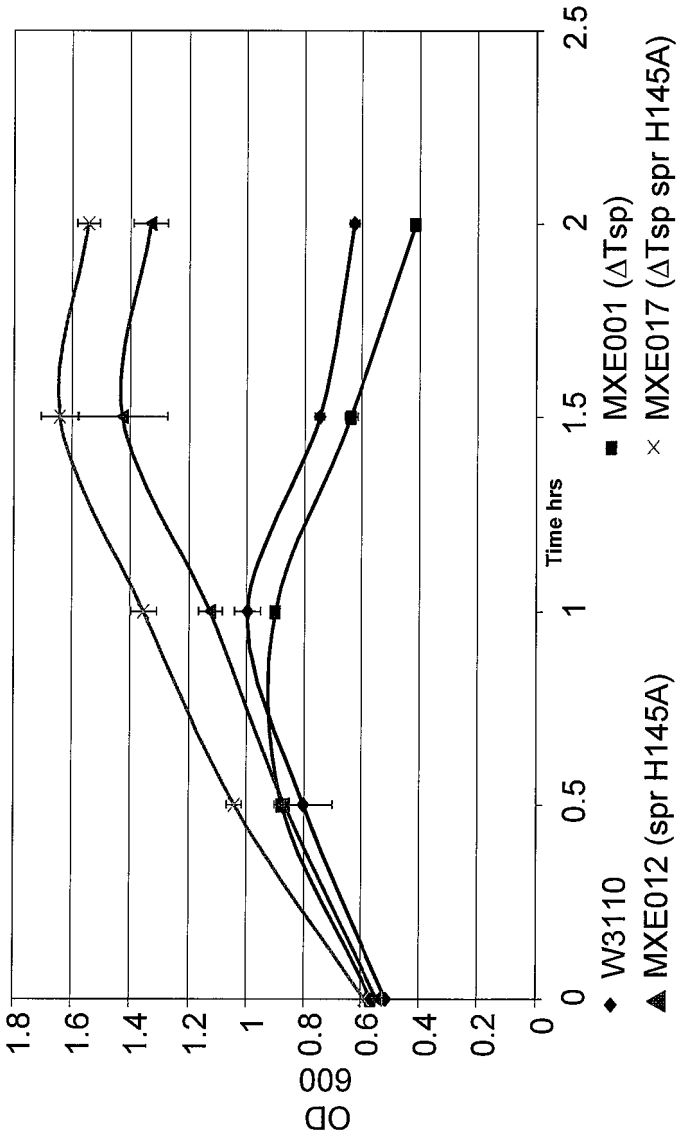

OD 600
1.8
1.6
1.4
1.2
1
0.8
0.6
0.4
0.2
0
0
0.5
1
1.5
2
2.5
Time hrs
W3110
MXE012 (spr H145A)
MXE001 (ΔTsp)
MXE017 (ΔTsp spr H145A)

Figure 1

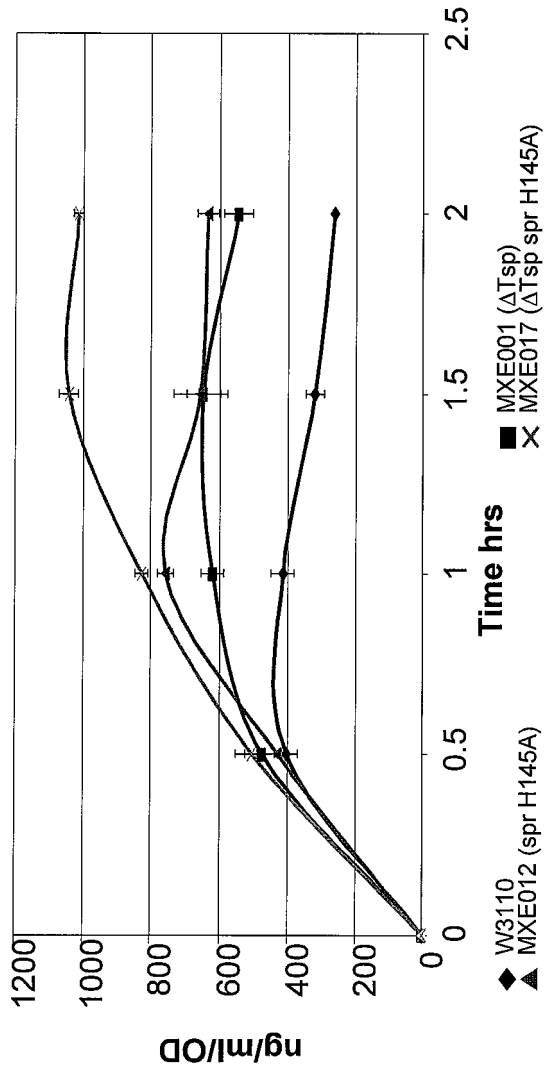

ng/ml/OD
1200
1000
800
600
400
200
0
0
0.5
1
1.5
2
2.5
Time hrs
W3110
MXE012 (spr H145A)
MXE001 (ΔTsp)
MXE017 (ΔTsp spr H145A)

Figure 2

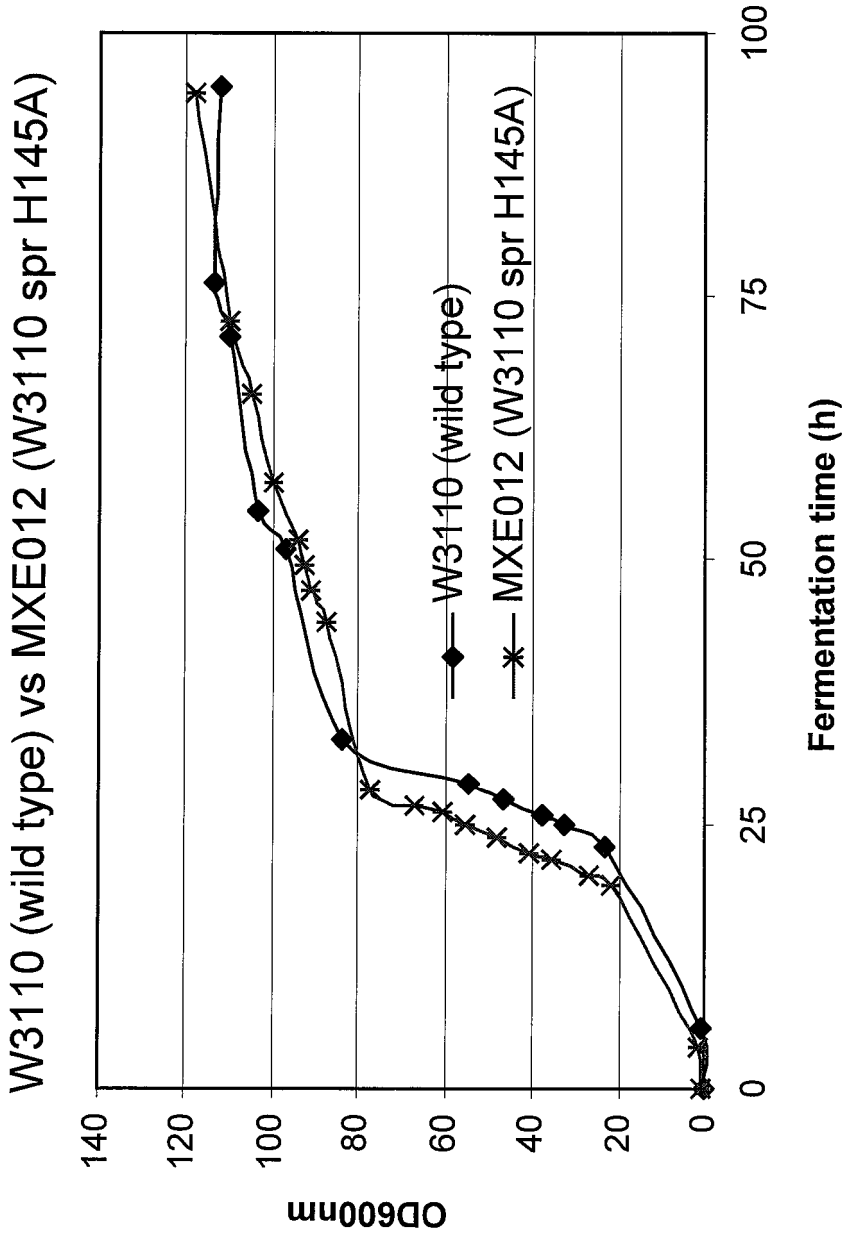

W3110 (wild type) vs MXE012 (W3110 spr H145A)
OD600nm
Fermentation time (h)
W3110 (wild type)
MXE012 (W3110 spr H145A)
0
20
40
60
80
100
120
140
0
25
50
75
100

Figure 3

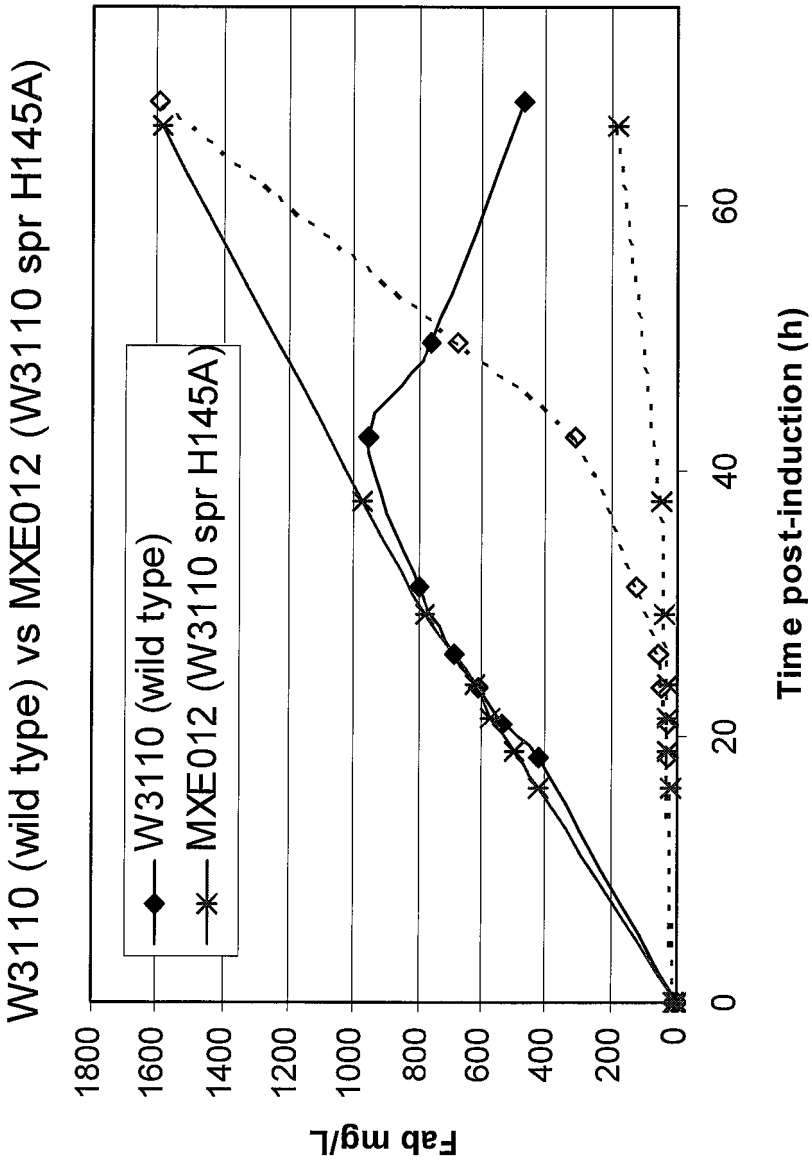

W3110 (wild type) vs MXE012 (W3110 spr H145A)
W3110 (wild type)
MXE012 (W3110 spr H145A)
Fab mg/L
Time post-induction (h)
0
200
400
600
800
1000
1200
1400
1600
1800
0
20
40
60

Figure 4

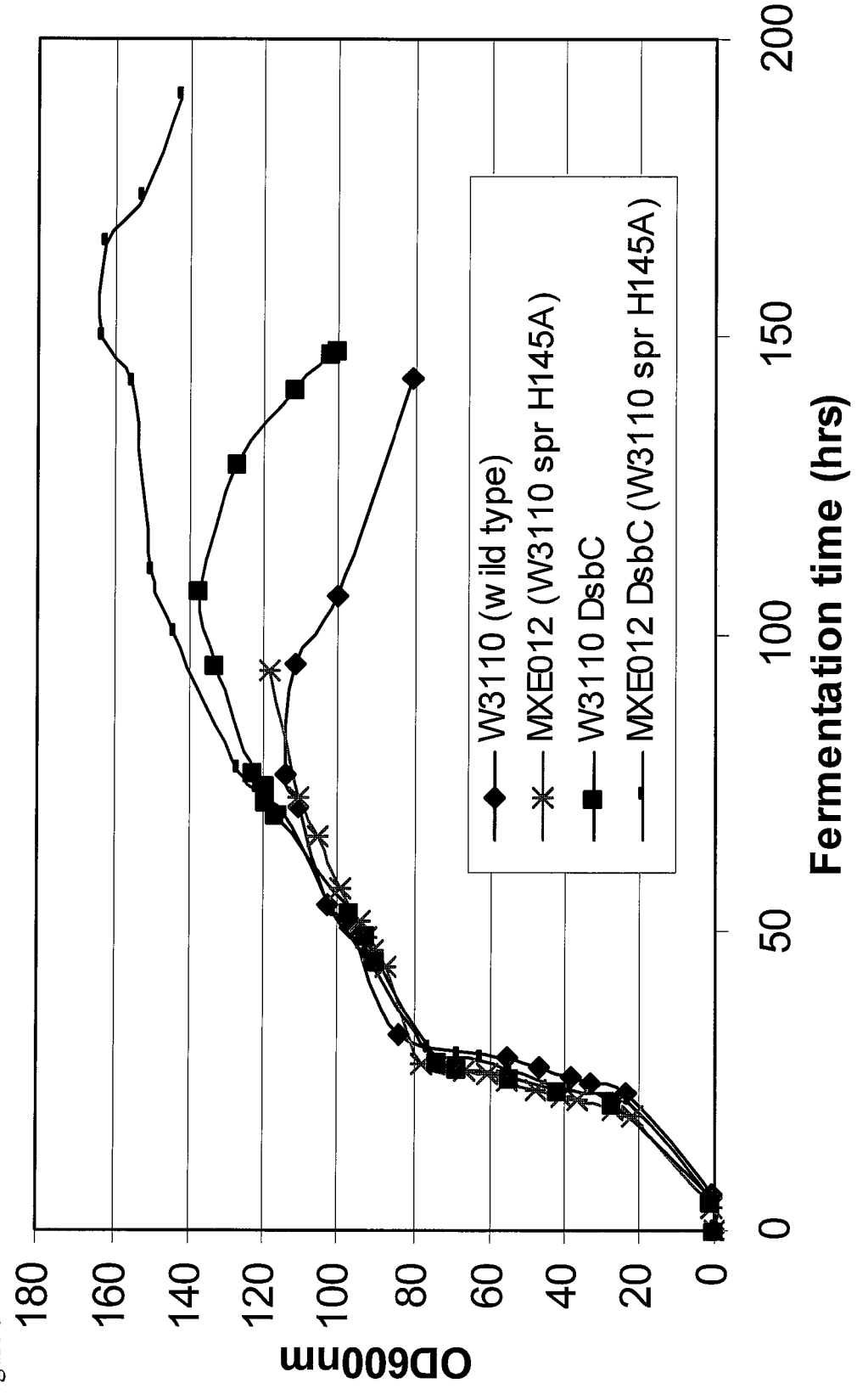

OD600nm
0
20
40
60
80
100
120
140
160
180
0
50
100
150
200
Fermentation time (hrs)
W3110 (wild type)
MXE012 (W3110 spr H145A)
W3110 DsbC
MXE012 DsbC (W3110 spr H145A)

Figure 5

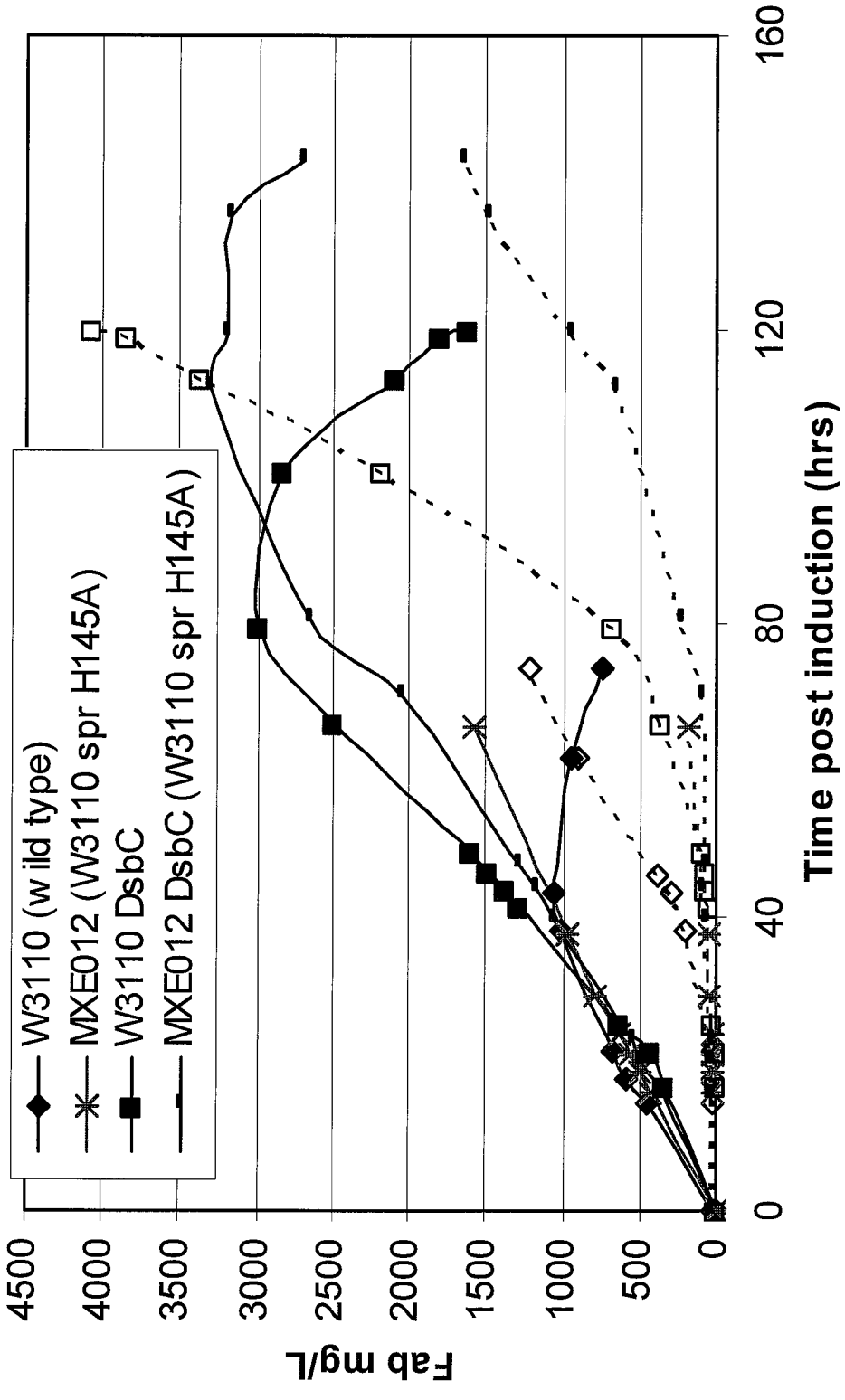

W3110 (w ild type)
MXE012 (W3110 spr H145A)
W3110 DsbC
MXE012 DsbC (W3110 spr H145A)
Fab mg/L
0
500
1000
1500
2000
2500
3000
3500
4000
4500
0
40
80
120
160
Time post induction (hrs)

Figure 6

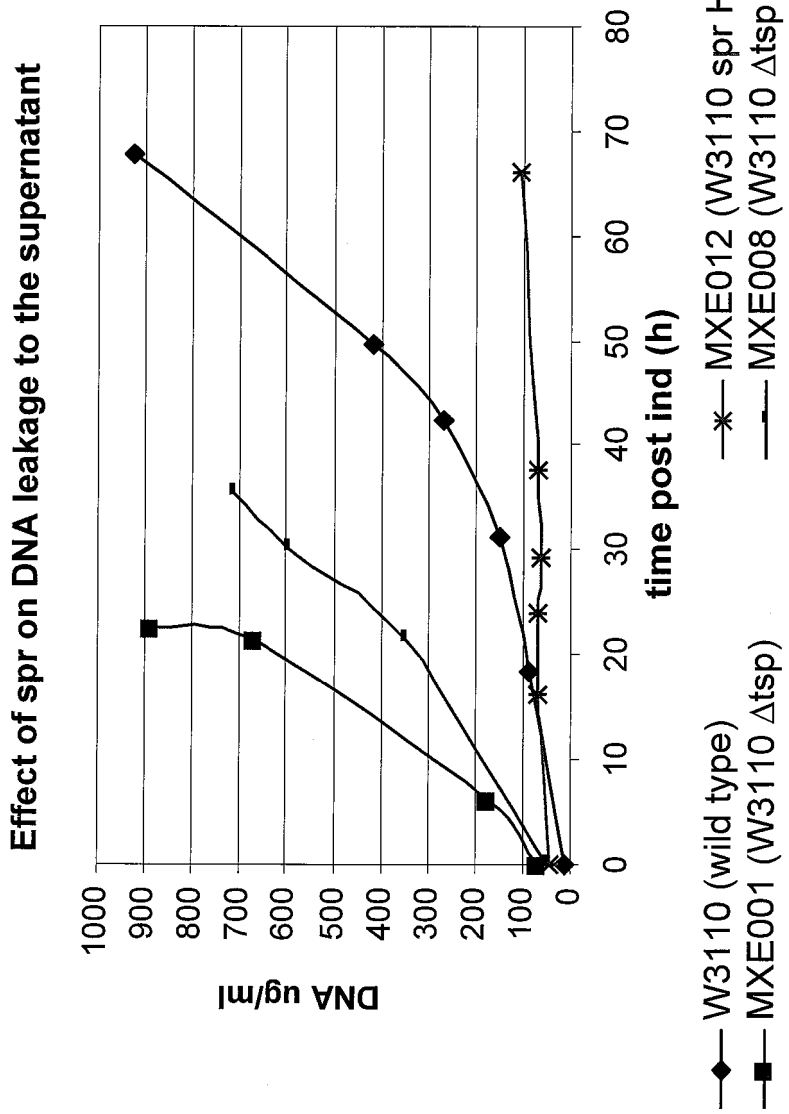

Effect of spr on DNA leakage to the supernatant
DNA ug/ml
1000
900
800
700
600
500
400
300
200
100
0
0
10
20
30
40
50
60
70
80
time post ind (h)
W3110 (wild type)
MXE001 (W3110 Δtsp)
MXE012 (W3110 spr H145A)
MXE008 (W3110 Δtsp spr D133A)

Figure 7

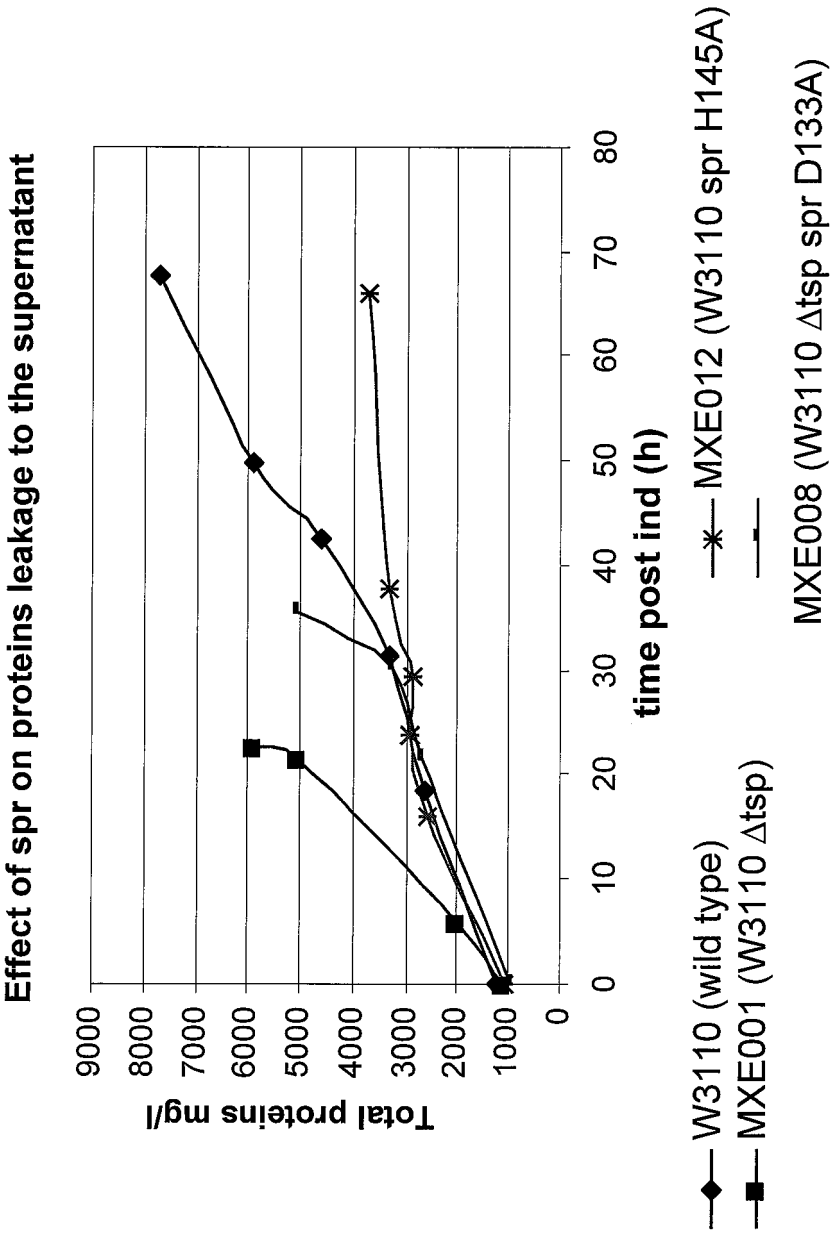

Effect of spr on proteins leakage to the supernatant
Total proteins mg/l
9000
8000
7000
6000
5000
4000
3000
2000
1000
0
0
10
20
30
40
50
60
70
80
time post ind (h)
W3110 (wild type)
MXE001 (W3110 Δtsp)
MXE012 (W3110 spr H145A)
MXE008 (W3110 Δtsp spr D133A)

Figure 8

Figure 9a

Wild type ptr (protease III) 5'.

```
  *   M   P   R   S   T   W   F   K   A   L   L   L   L   V
TGA ATG CCC CGC AGC ACC TGG TTC AAA GCA TTA TTG TTG TTA GTT

  A   L   W   A   P   L   S
GCC CTT TGG GCA CCC TTA AGT
```

Mutated Δ ptr (protease III) 5'.

```
   EcoR I
  ~~~~~~~~
  *   I   P   R   S   T   W   F   K   A   L   L   L   L   V
TGA ATT CCC CGC AGC ACC TGG TTC AAA GCA TTA TTG TTG TTA GTT

                          Ase I
                        ~~~~~~~~
  A   L   W   A   H   *   C
GCC CTT TGG GCA CAT TAA TGT
```

Figure 9b

Wild type Tsp 5'.

```
  M   N   M   F   F   R   L   T   A   L   A   G   L   L   A
ATG AAC ATG TTT TTT AGG CTT ACC GCG TTA GCT GGC CTG CTT GCA

  I   A   G   Q   T   F   A
ATA GCA GGC CAG ACC TTC GCT
```

Mutated Δ Tsp 5'.

```
   EcoR I
  ~~~~~~~~
  M   N   S   F   L   G   L   P   R   *   L   A   C   L   Q
ATG AAT TCG TTT TTA GGC TTA CCG CGT TAG CTG GCC TGC TTG CAA

                          Ase I
                        ~~~~~~~~
  *   Q   A   R   H   *   L
TAG CAG GCC AGA CAT TAA TTG
```

Figure 9c

Wild type DegP

202 D A A I N R G N **S** G G
949 GAT GCA GCG ATC AAC CGT GGT AAC ***TCC*** GGT GGT

Mutated DegP S210A

Ase I
~~~~~~~~~

202 D A A I N R G N **A** G G
~~~~~~~~~

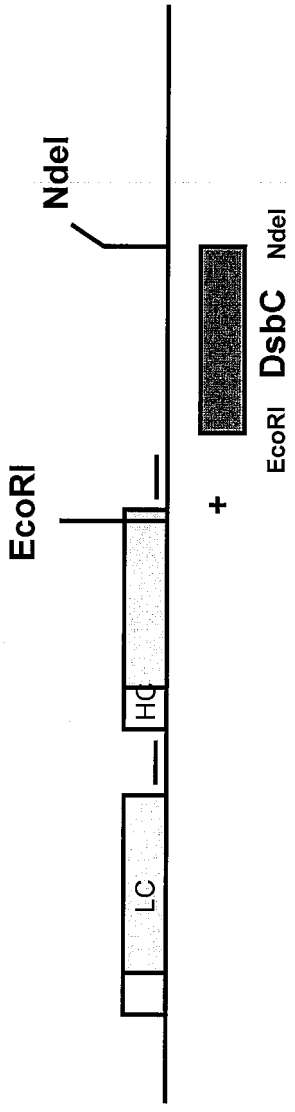


Figure 10

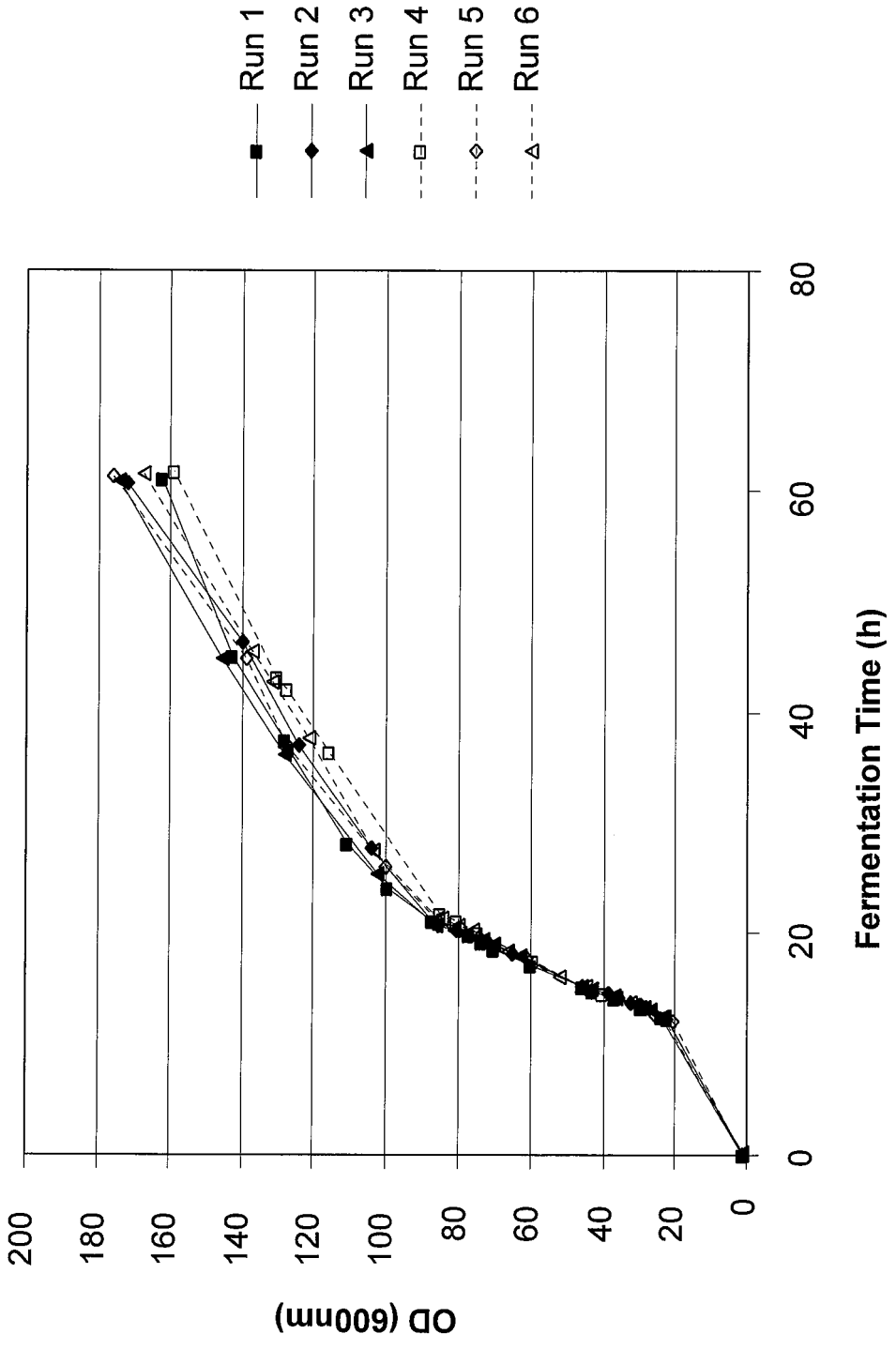

Run 1
Run 2
Run 3
Run 4
Run 5
Run 6
OD (600nm)
0
20
40
60
80
100
120
140
160
180
200
Fermentation Time (h)
0
20
40
60
80

Figure 11

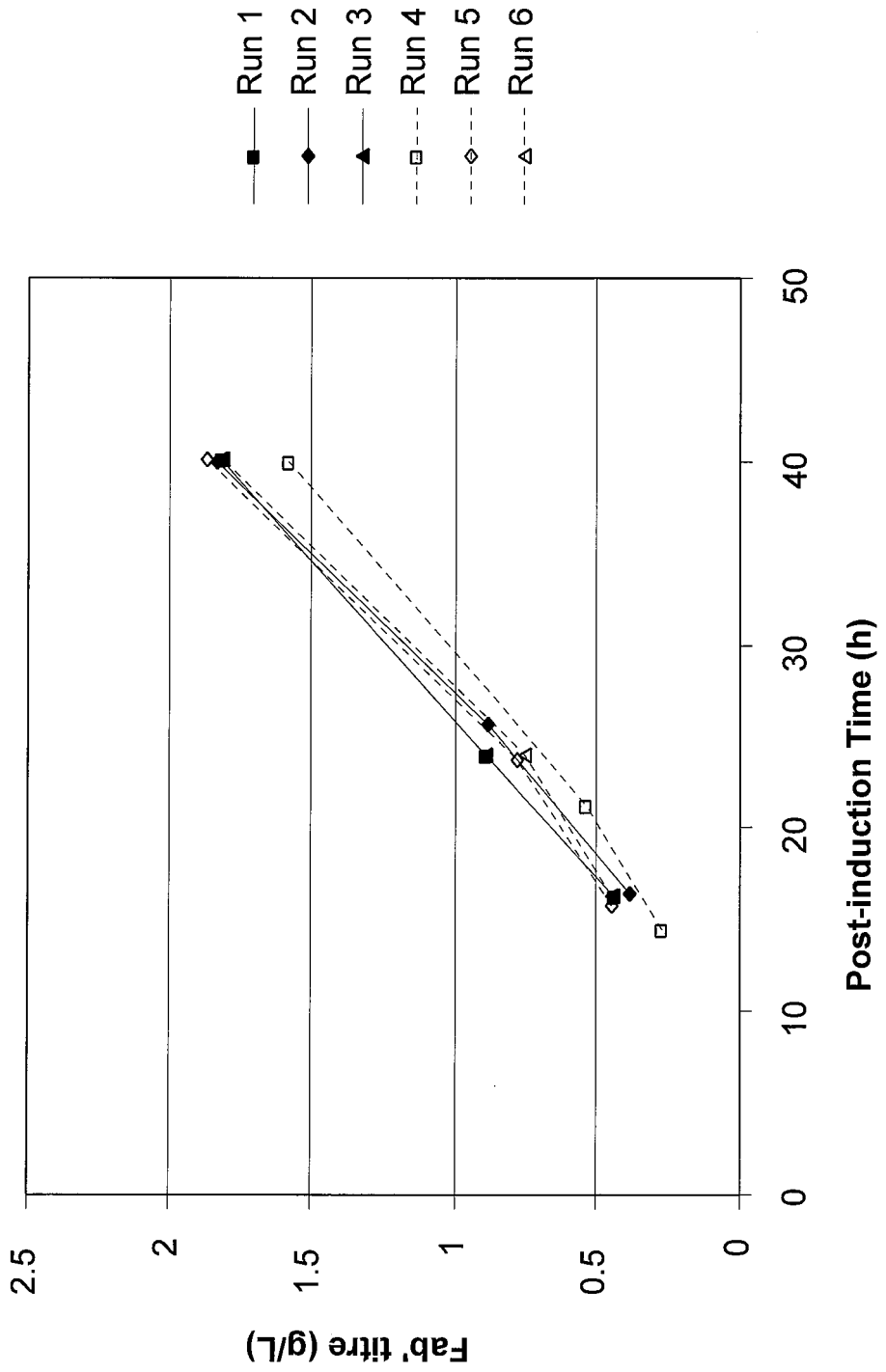

Run 1
Run 2
Run 3
Run 4
Run 5
Run 6
Fab' titre (g/L)
2.5
2
1.5
1
0.5
0
0
10
20
30
40
50
Post-induction Time (h)

Figure 12

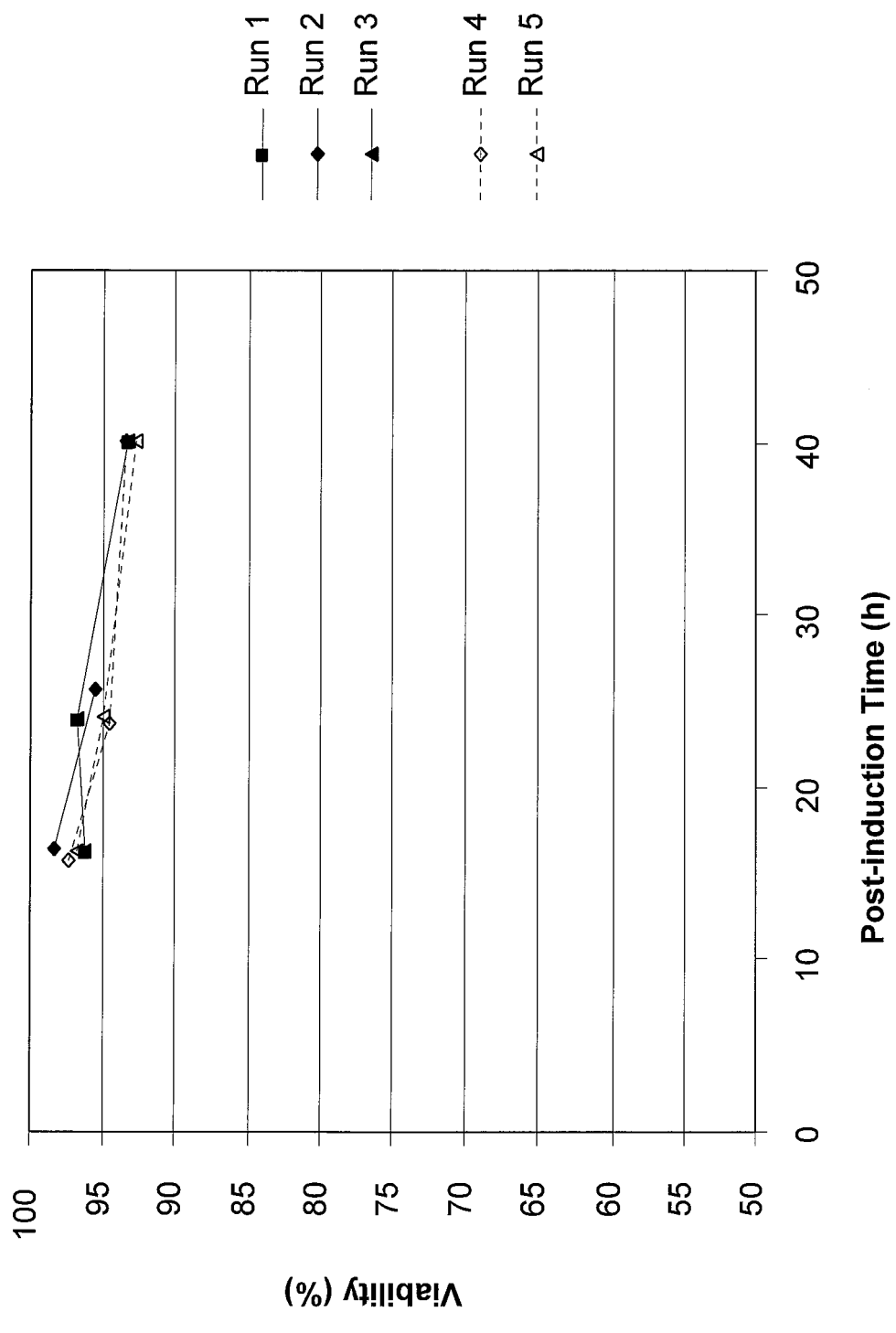

Run 1
Run 2
Run 3
Run 4
Run 5
Viability (%)
100
95
90
85
80
75
70
65
60
55
50
0
10
20
30
40
50
Post-induction Time (h)

Figure 13

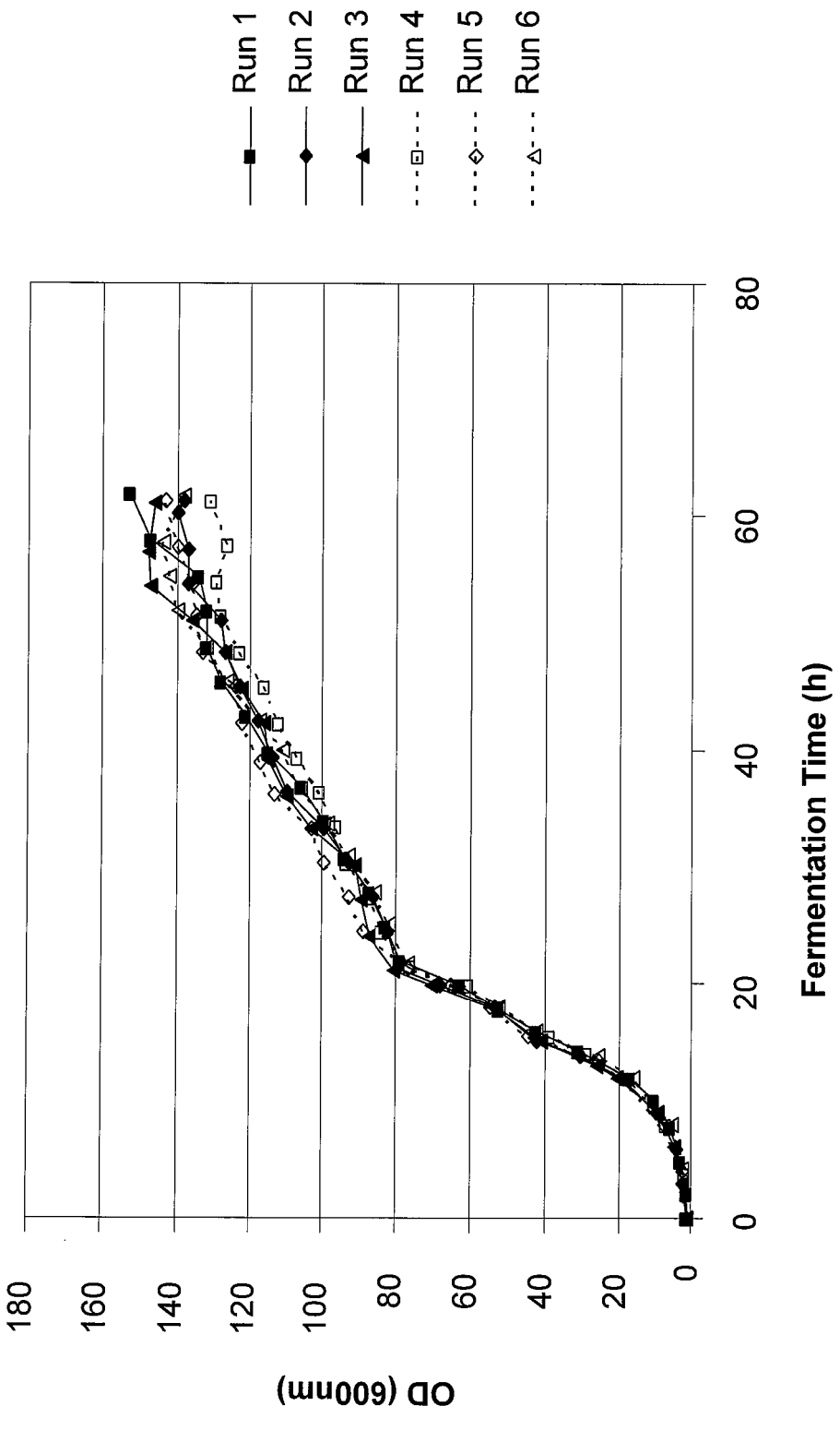

Run 1
Run 2
Run 3
Run 4
Run 5
Run 6
OD (600nm)
0
20
40
60
80
100
120
140
160
180
Fermentation Time (h)
0
20
40
60
80

Figure 14

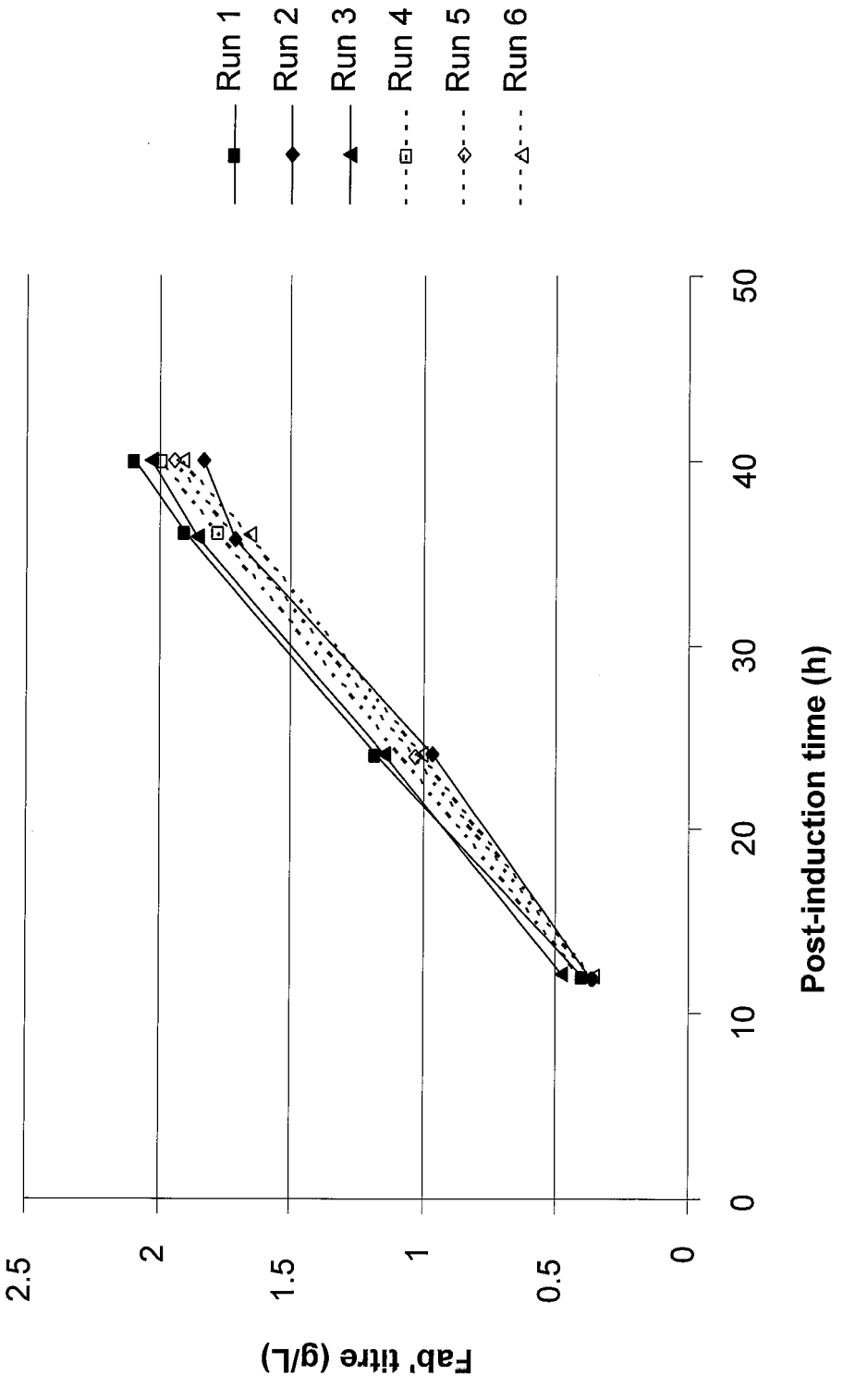

Run 1
Run 2
Run 3
Run 4
Run 5
Run 6
Fab' titre (g/L)
2.5
2
1.5
1
0.5
0
0
10
20
30
40
50
Post-induction time (h)

Figure 15