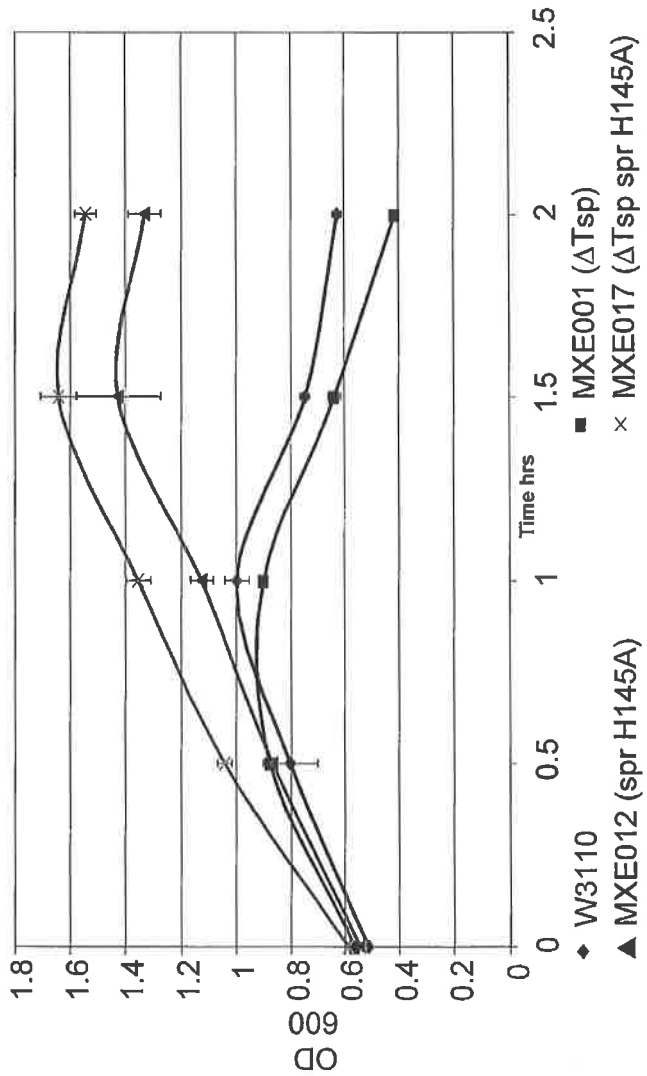

OD 600
1.8
1.6
1.4
1.2
1
0.8
0.6
0.4
0.2
0
0
0.5
1
1.5
2
2.5
Time hrs
◆ W3110
▲ MXE012 (spr H145A)
■ MXE001 (ΔTsp)
× MXE017 (ΔTsp spr H145A)

Figure 1

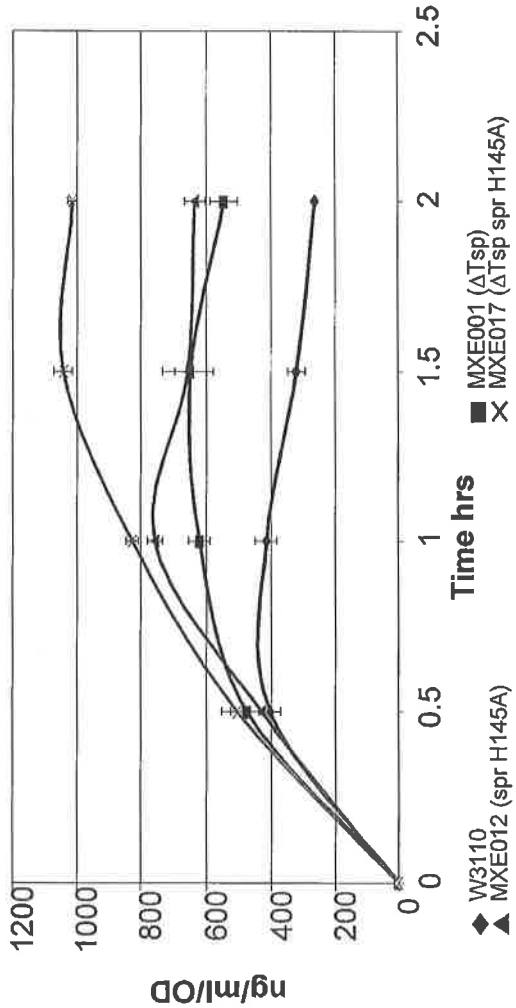

ng/ml/OD
1200
1000
800
600
400
200
0
0
0.5
1
1.5
2
2.5
Time hrs
◆ W3110
▲ MXE012 (spr H145A)
■ MXE001 (ΔTsp)
× MXE017 (ΔTsp spr H145A)

Figure 2

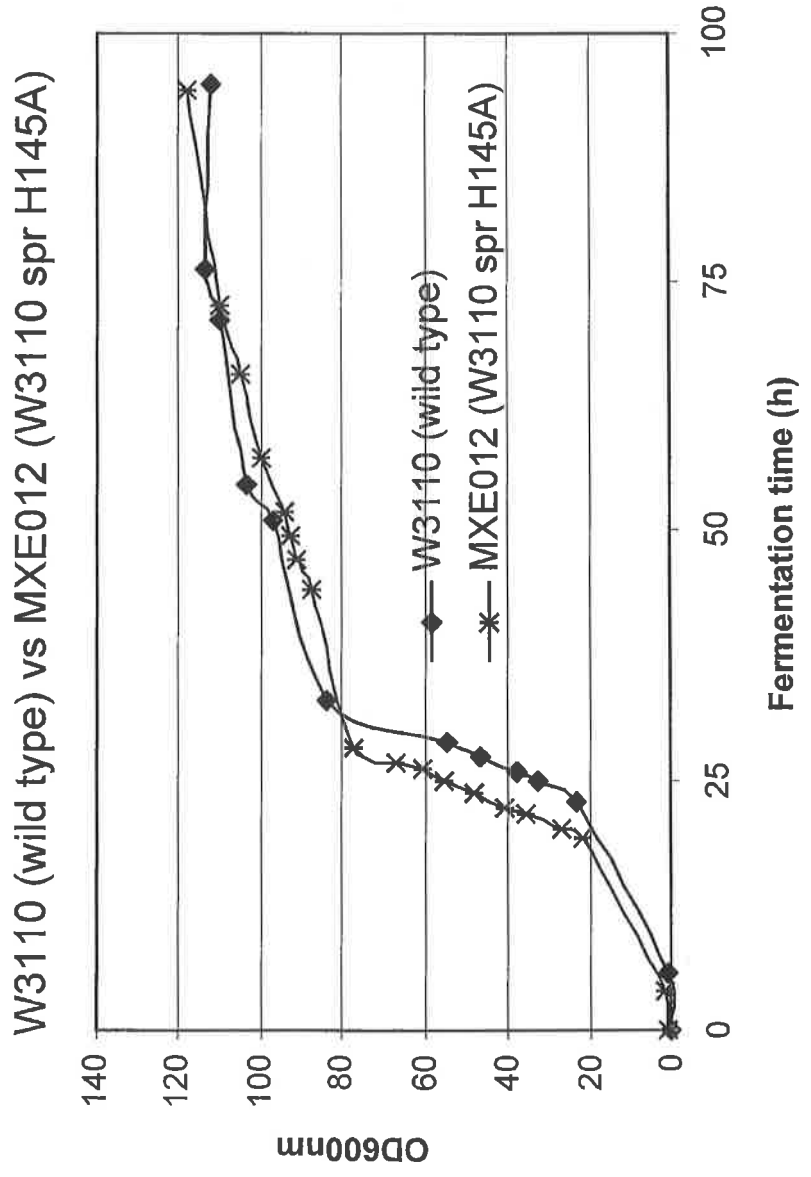

W3110 (wild type) vs MXE012 (W3110 spr H145A)
OD600nm
140
120
100
80
60
40
20
0
0
25
50
75
100
Fermentation time (h)
W3110 (wild type)
MXE012 (W3110 spr H145A)

Figure 3

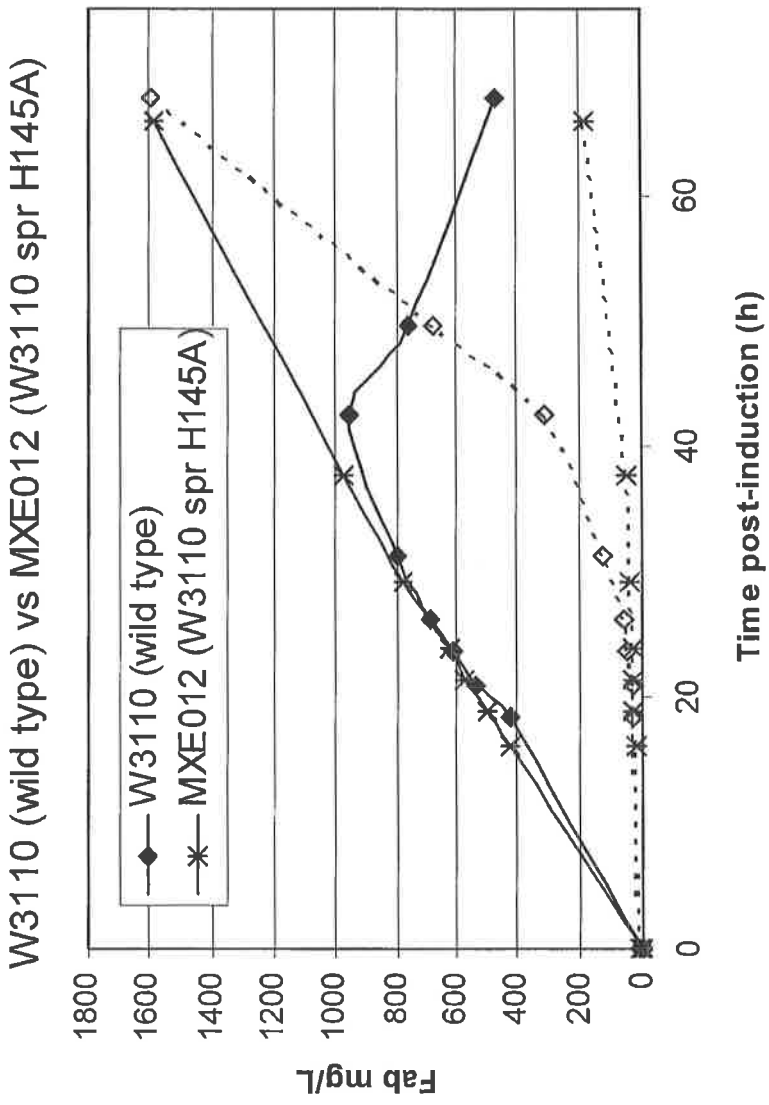

W3110 (wild type) vs MXE012 (W3110 spr H145A)
W3110 (wild type)
MXE012 (W3110 spr H145A)
Fab mg/L
Time post-induction (h)
0
200
400
600
800
1000
1200
1400
1600
1800
0
20
40
60

Figure 4

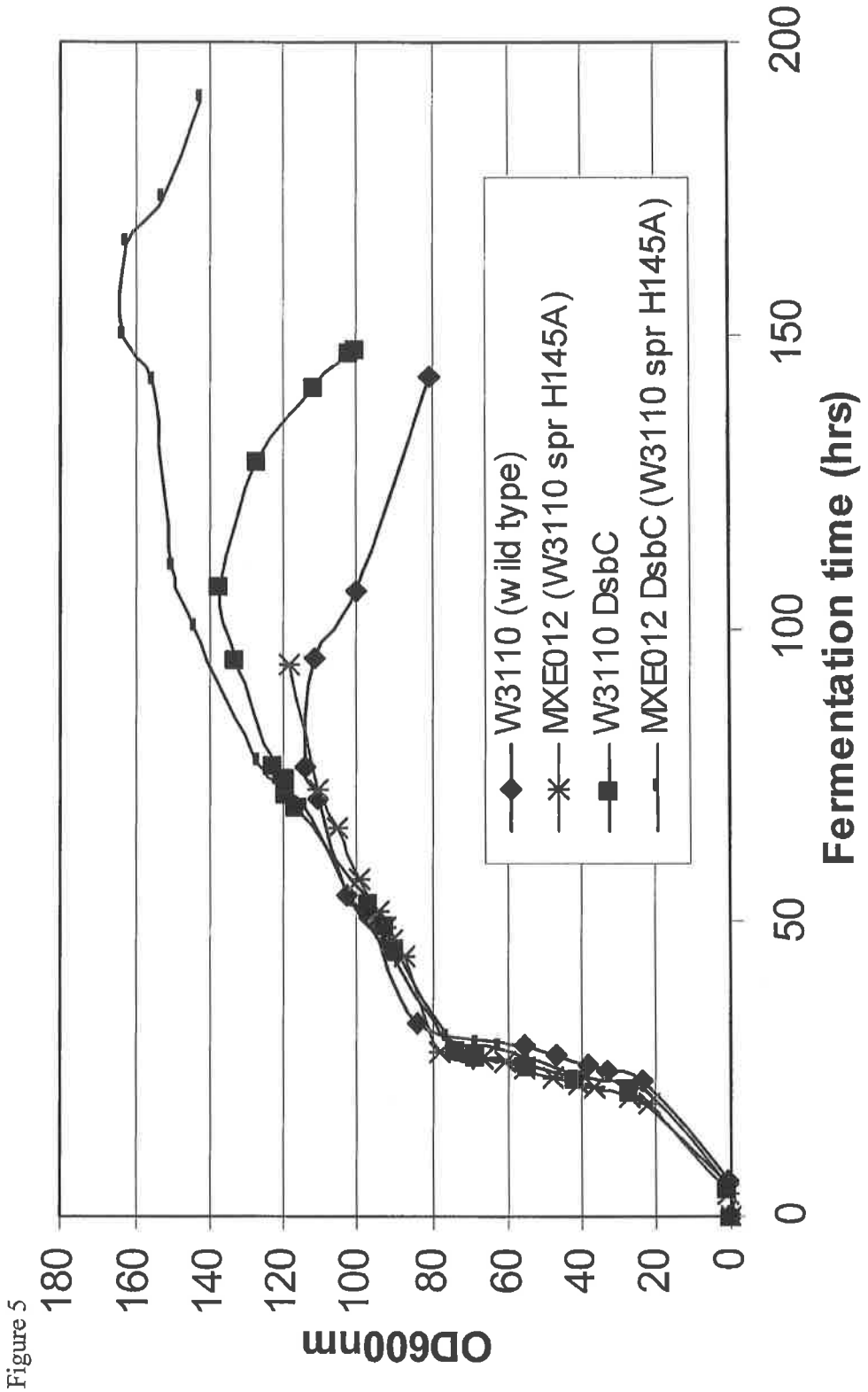

OD600nm
0
20
40
60
80
100
120
140
160
180
0
50
100
150
200
Fermentation time (hrs)
W3110 (w ild type)
MXE012 (W3110 spr H145A)
W3110 DsbC
MXE012 DsbC (W3110 spr H145A)

Figure 5

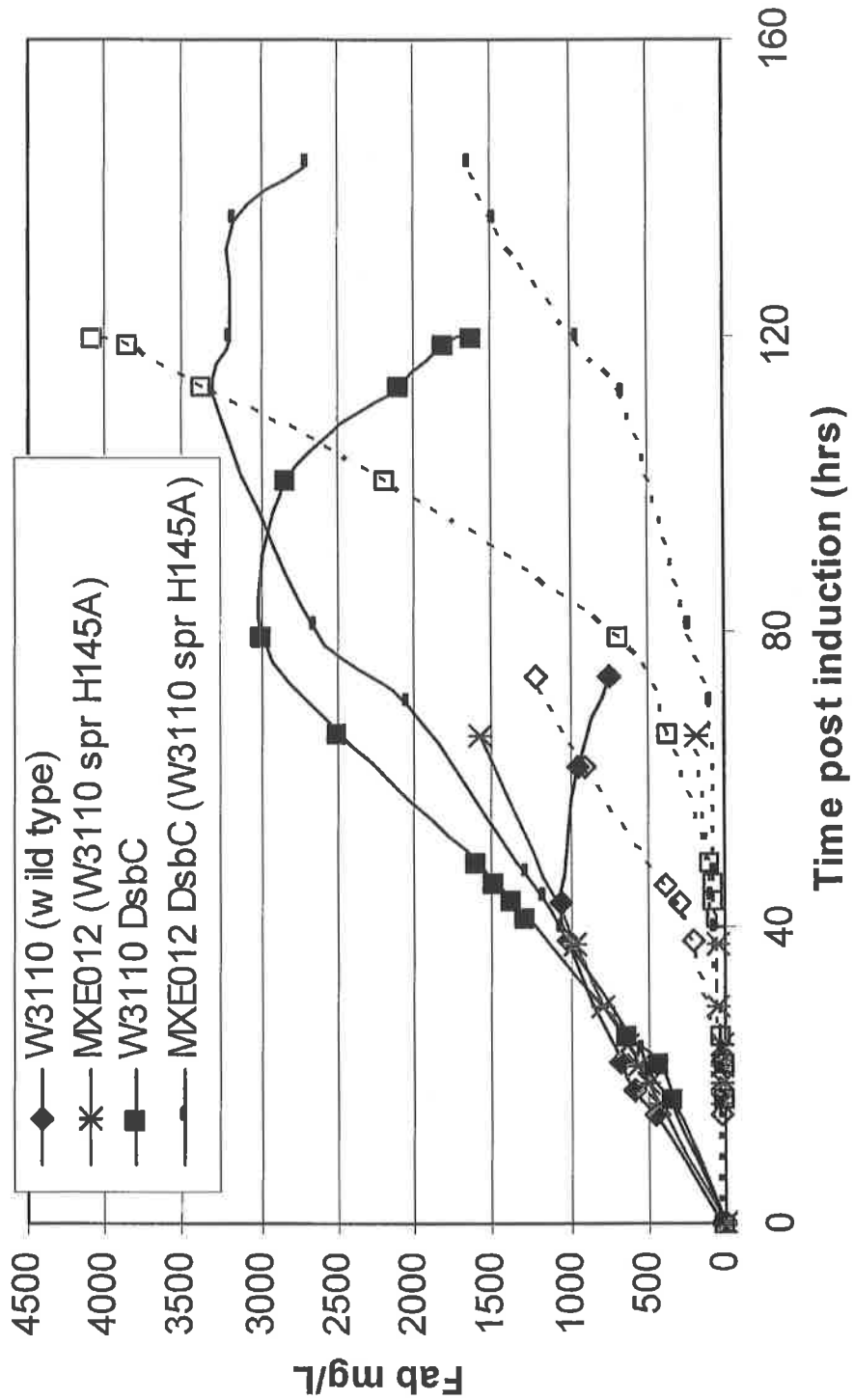

W3110 (w ild type)
MXE012 (W3110 spr H145A)
W3110 DsbC
MXE012 DsbC (W3110 spr H145A)
Fab mg/L
4500
4000
3500
3000
2500
2000
1500
1000
500
0
0
40
80
120
160
Time post induction (hrs)

Figure 6

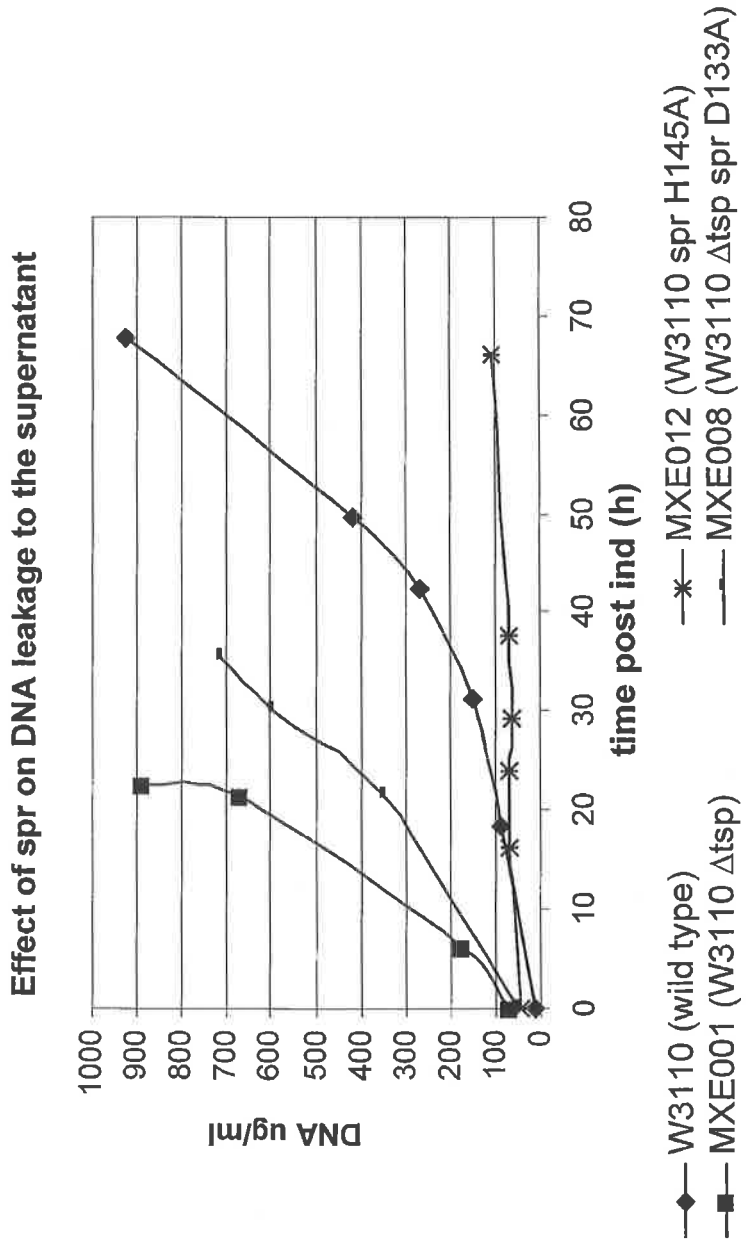

Effect of spr on DNA leakage to the supernatant
DNA ug/ml
1000
900
800
700
600
500
400
300
200
100
0
0
10
20
30
40
50
60
70
80
time post ind (h)
W3110 (wild type)
MXE001 (W3110 Δtsp)
MXE012 (W3110 spr H145A)
MXE008 (W3110 Δtsp spr D133A)

Figure 7

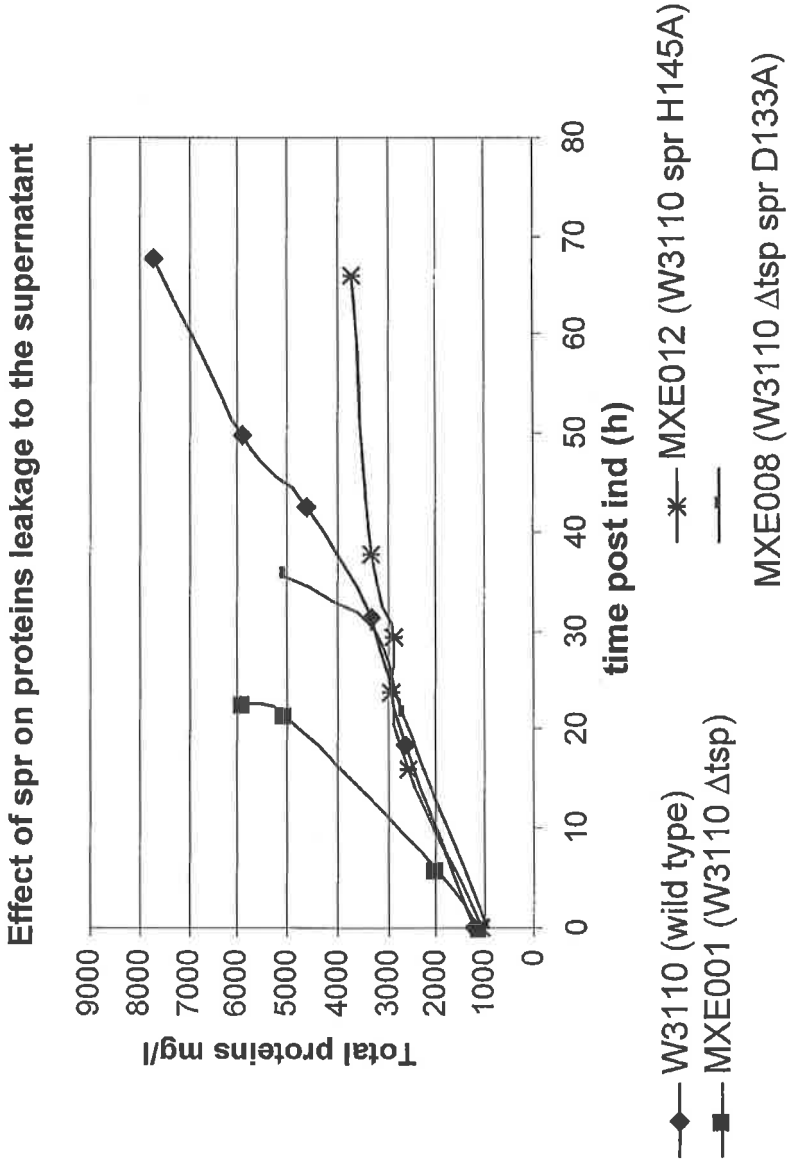

Effect of spr on proteins leakage to the supernatant
Total proteins mg/l
9000
8000
7000
6000
5000
4000
3000
2000
1000
0
0
10
20
30
40
50
60
70
80
time post ind (h)
W3110 (wild type)
MXE001 (W3110 Δtsp)
MXE012 (W3110 spr H145A)
MXE008 (W3110 Δtsp spr D133A)

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 C***AT TAA T***GT

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 TT***T*** 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 C***AT TAA T***TG

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

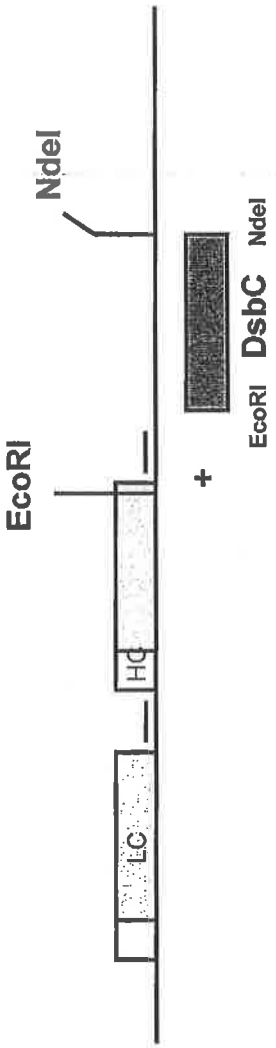



Figure 10

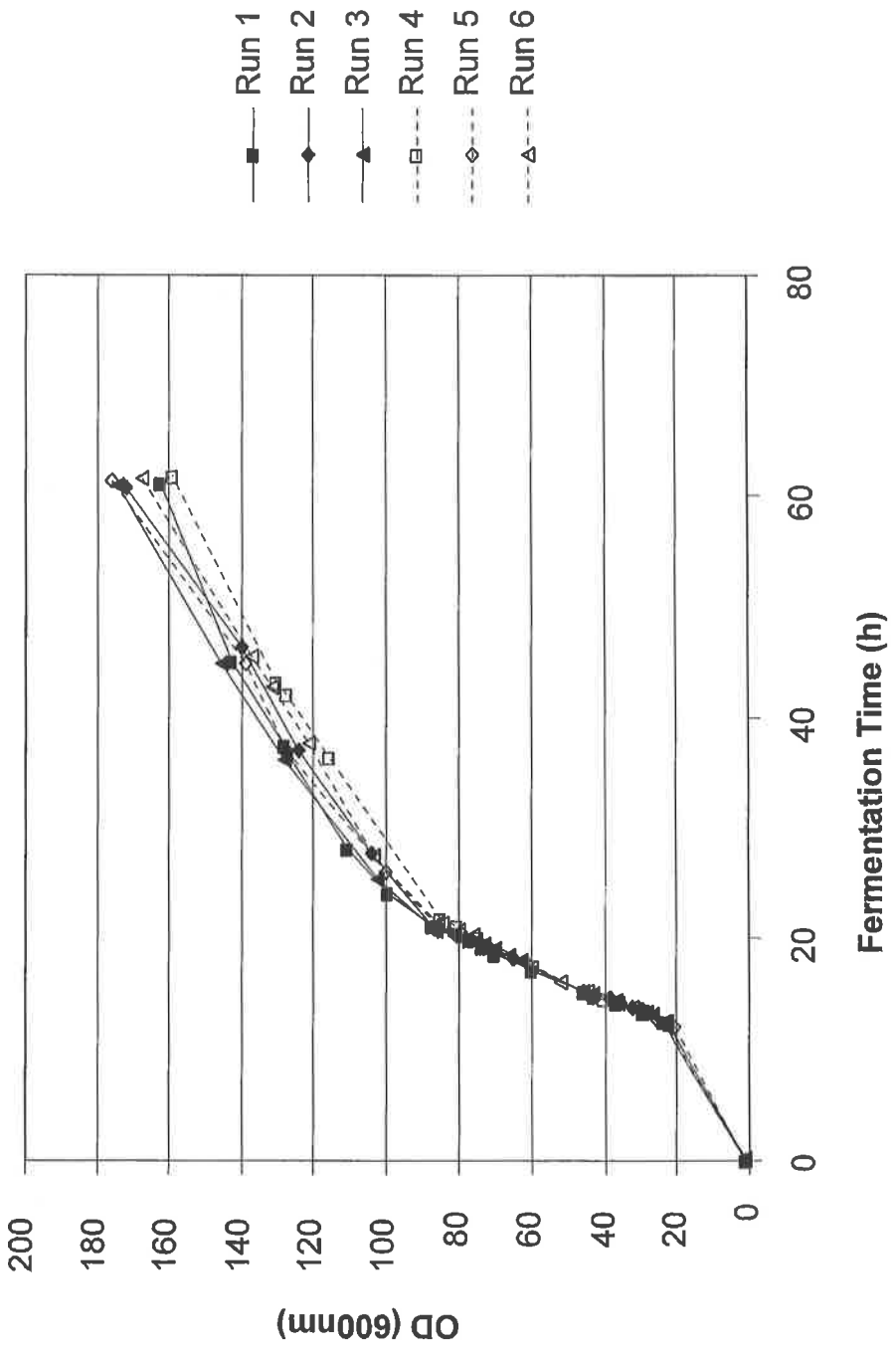

Run 1
Run 2
Run 3
Run 4
Run 5
Run 6
OD (600nm)
0
20
40
60
80
100
120
140
160
180
200
Fermentation Time (h)
0
20
40
60
80

Figure 11

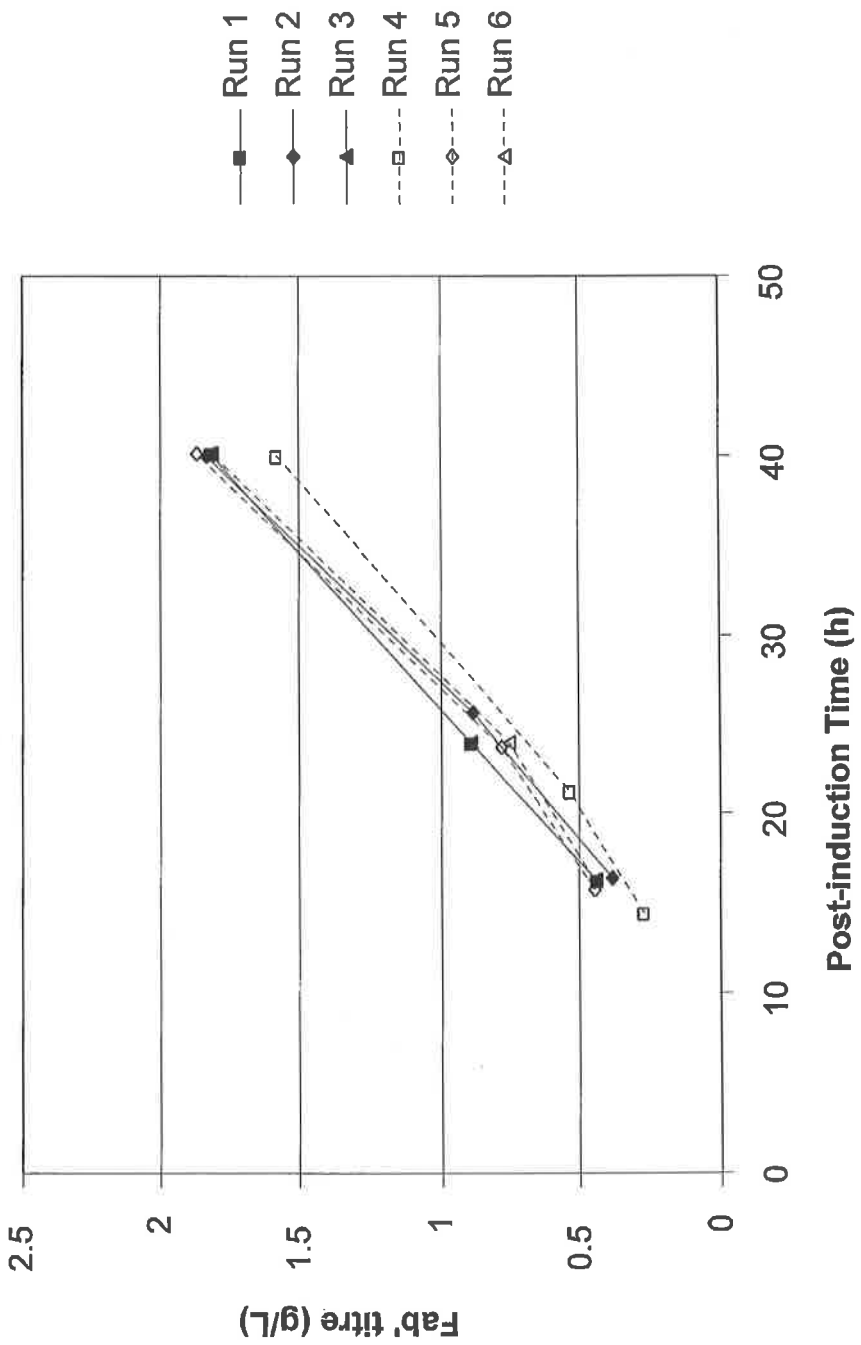

Run 1
Run 2
Run 3
Run 4
Run 5
Run 6
Fab' titre (g/L)
2.5
2
1.5
1
0.5
0
0
10
20
30
40
50
Post-induction Time (h)

Figure 12

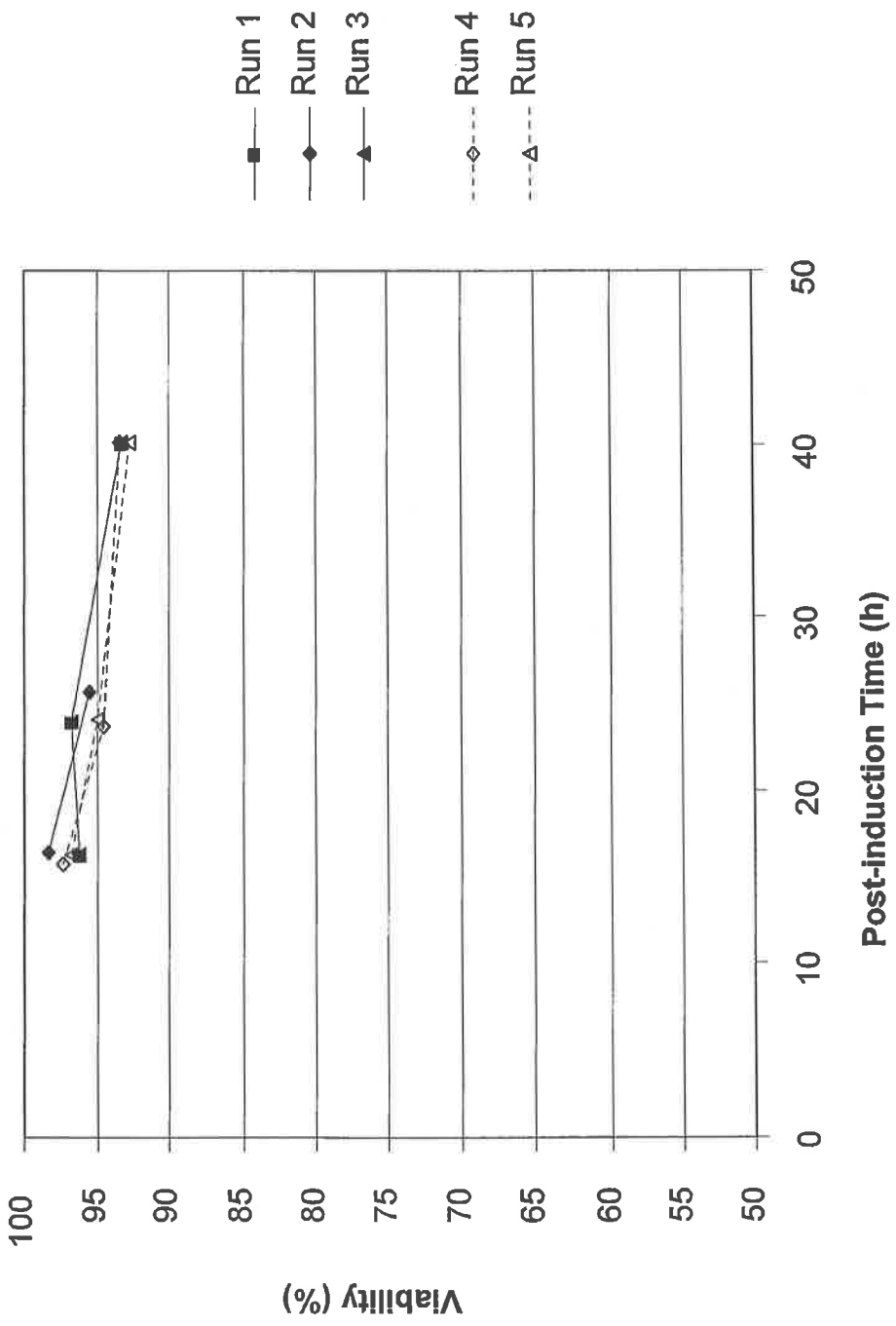

Run 1
Run 2
Run 3
Run 4
Run 5
Viability (%)
100
95
90
85
80
75
70
65
60
55
50
0
10
20
30
40
50
Post-induction Time (h)

Figure 13

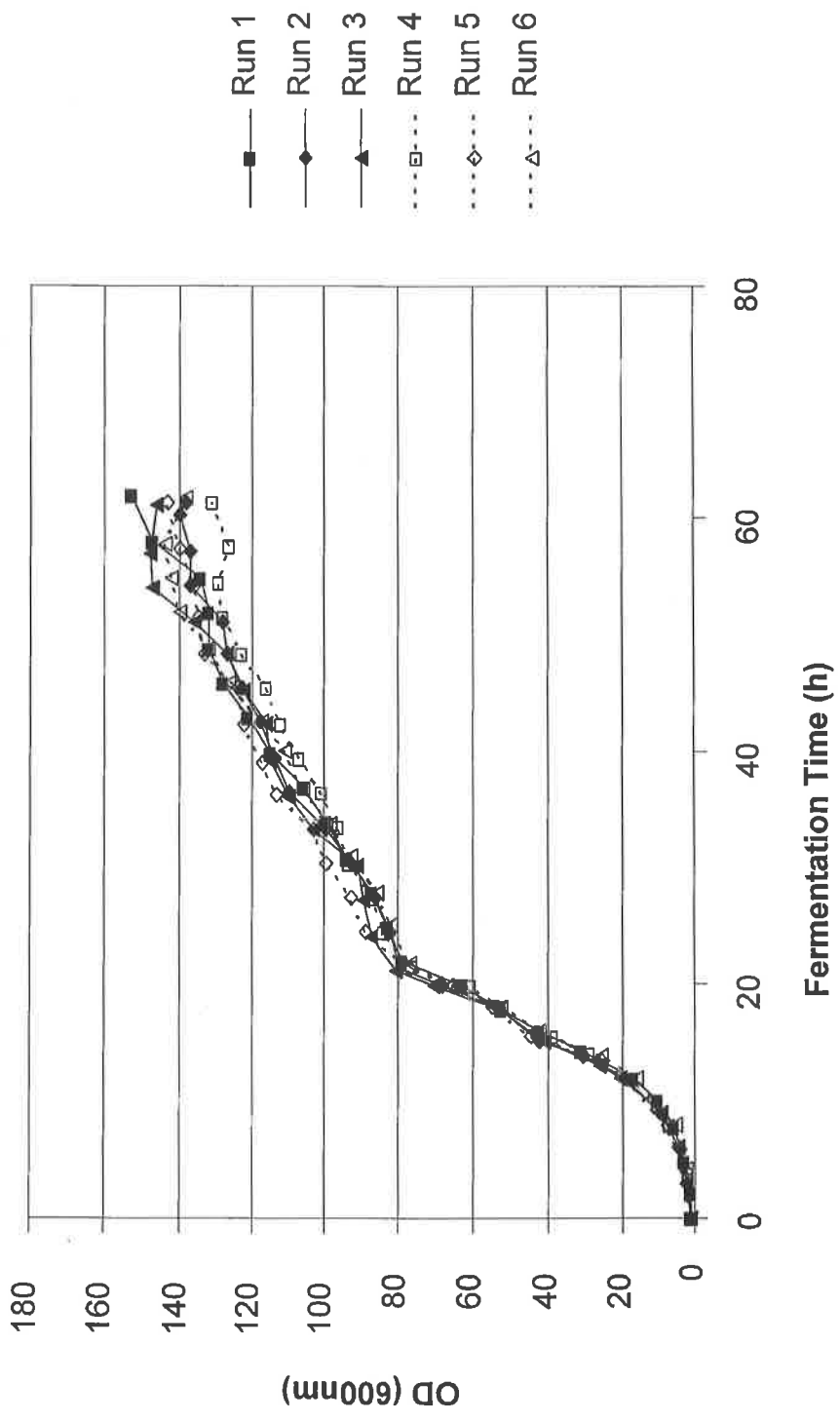

Run 1
Run 2
Run 3
Run 4
Run 5
Run 6
OD (600nm)
0
20
40
60
80
100
120
140
160
180
Fermentation Time (h)
0
20
40
60
80

Figure 14

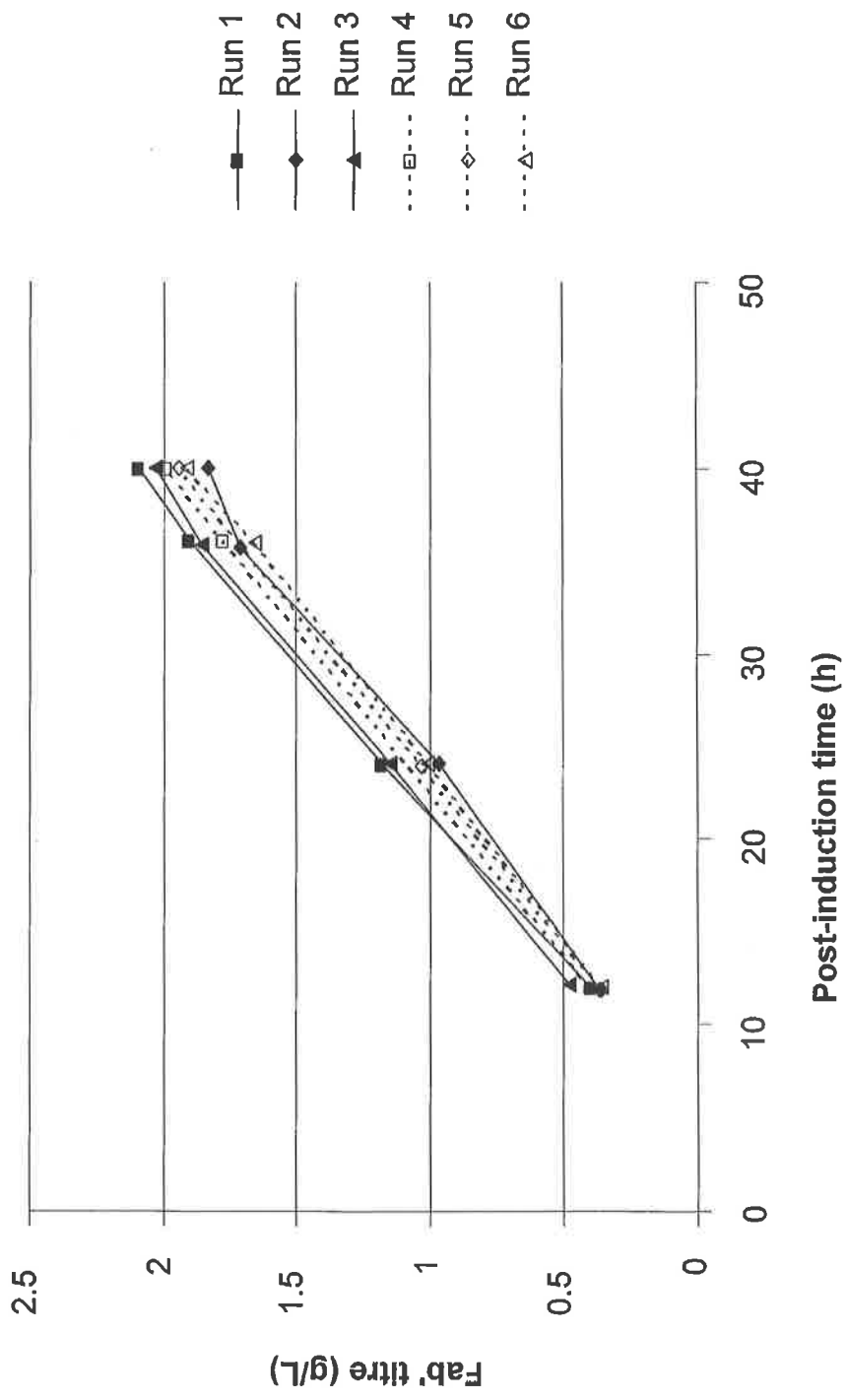

Run 1
Run 2
Run 3
Run 4
Run 5
Run 6
Fab' titre (g/L)
2.5
2
1.5
1
0.5
0
0
10
20
30
40
50
Post-induction time (h)

Figure 15