Fig. 1

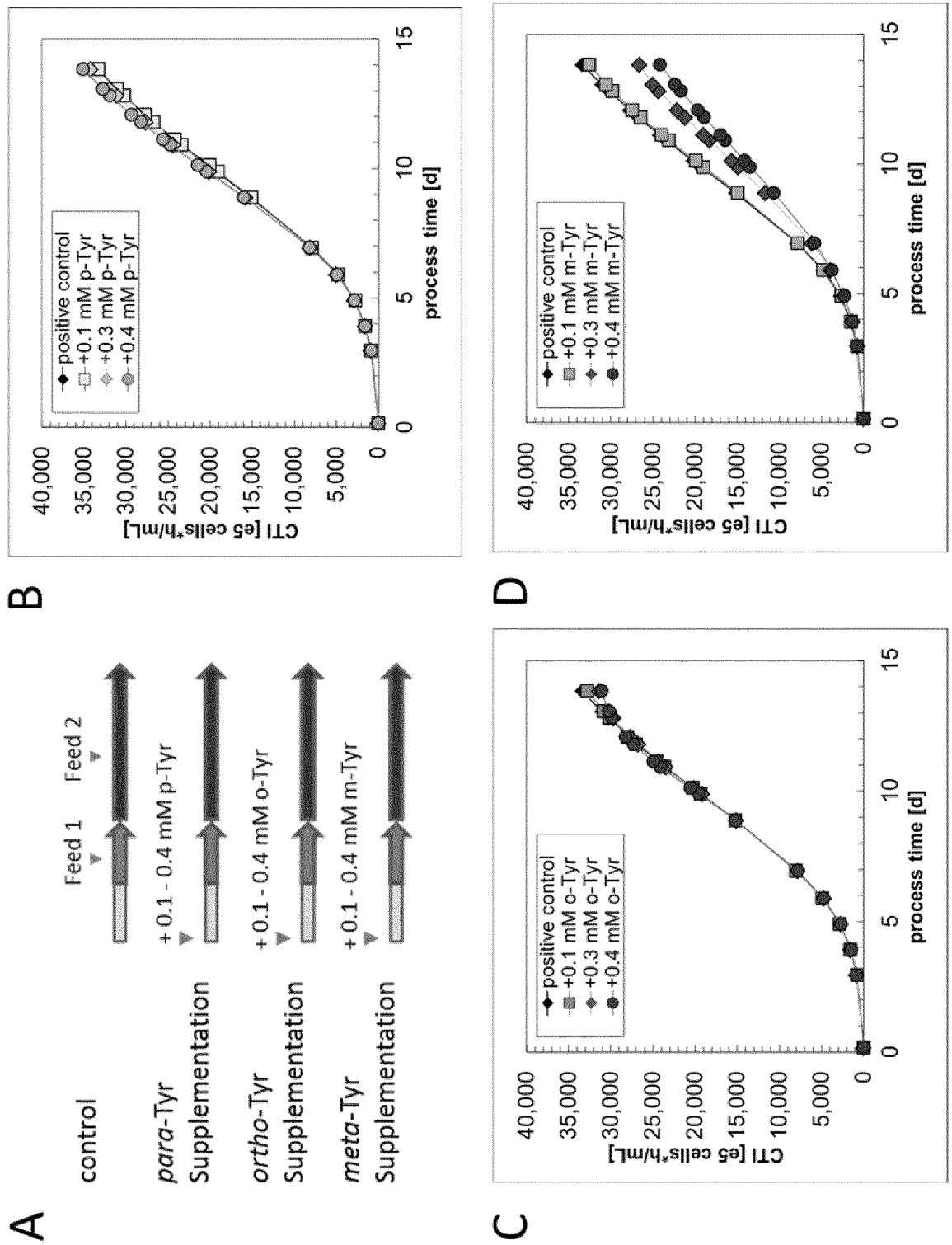

A
control
Feed 1
Feed 2
para-Tyr Supplementation
+ 0.1 - 0.4 mM p-Tyr
ortho-Tyr Supplementation
+ 0.1 - 0.4 mM o-Tyr
meta-Tyr Supplementation
+ 0.1 - 0.4 mM m-Tyr
B
positive control
+0.1 mM p-Tyr
+0.3 mM p-Tyr
+0.4 mM p-Tyr
CTI [e5 cells*h/mL]
process time [d]
C
positive control
+0.1 mM o-Tyr
+0.3 mM o-Tyr
+0.4 mM o-Tyr
CTI [e5 cells*h/mL]
process time [d]
D
positive control
+0.1 mM m-Tyr
+0.3 mM m-Tyr
+0.4 mM m-Tyr
CTI [e5 cells*h/mL]
process time [d]

Fig. 2

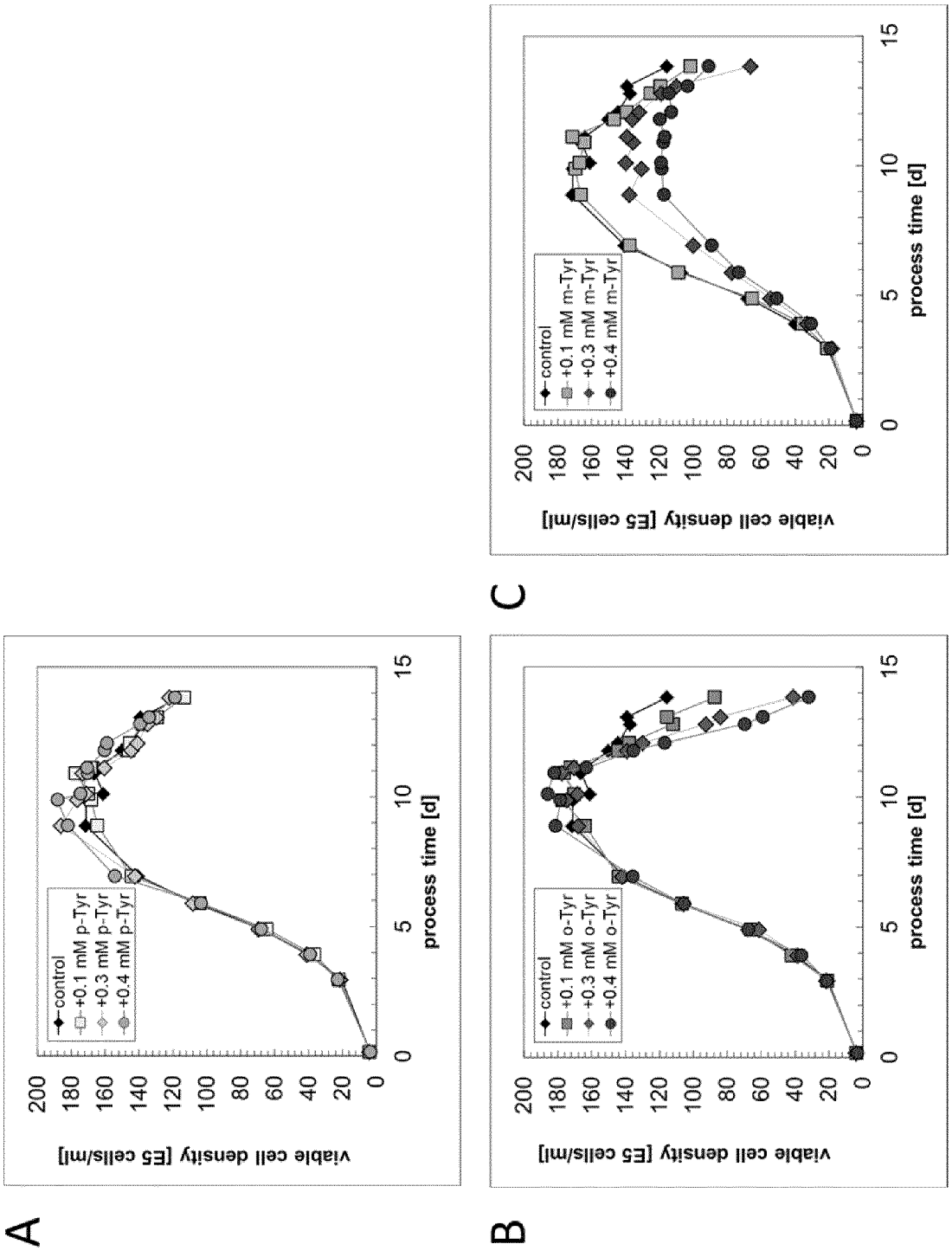

A
B
C
viable cell density [E5 cells/ml]
process time [d]
control
+0.1 mM p-Tyr
+0.3 mM p-Tyr
+0.4 mM p-Tyr
+0.1 mM o-Tyr
+0.3 mM o-Tyr
+0.4 mM o-Tyr
+0.1 mM m-Tyr
+0.3 mM m-Tyr
+0.4 mM m-Tyr
0
20
40
60
80
100
120
140
160
180
200
5
10
15

Fig. 3

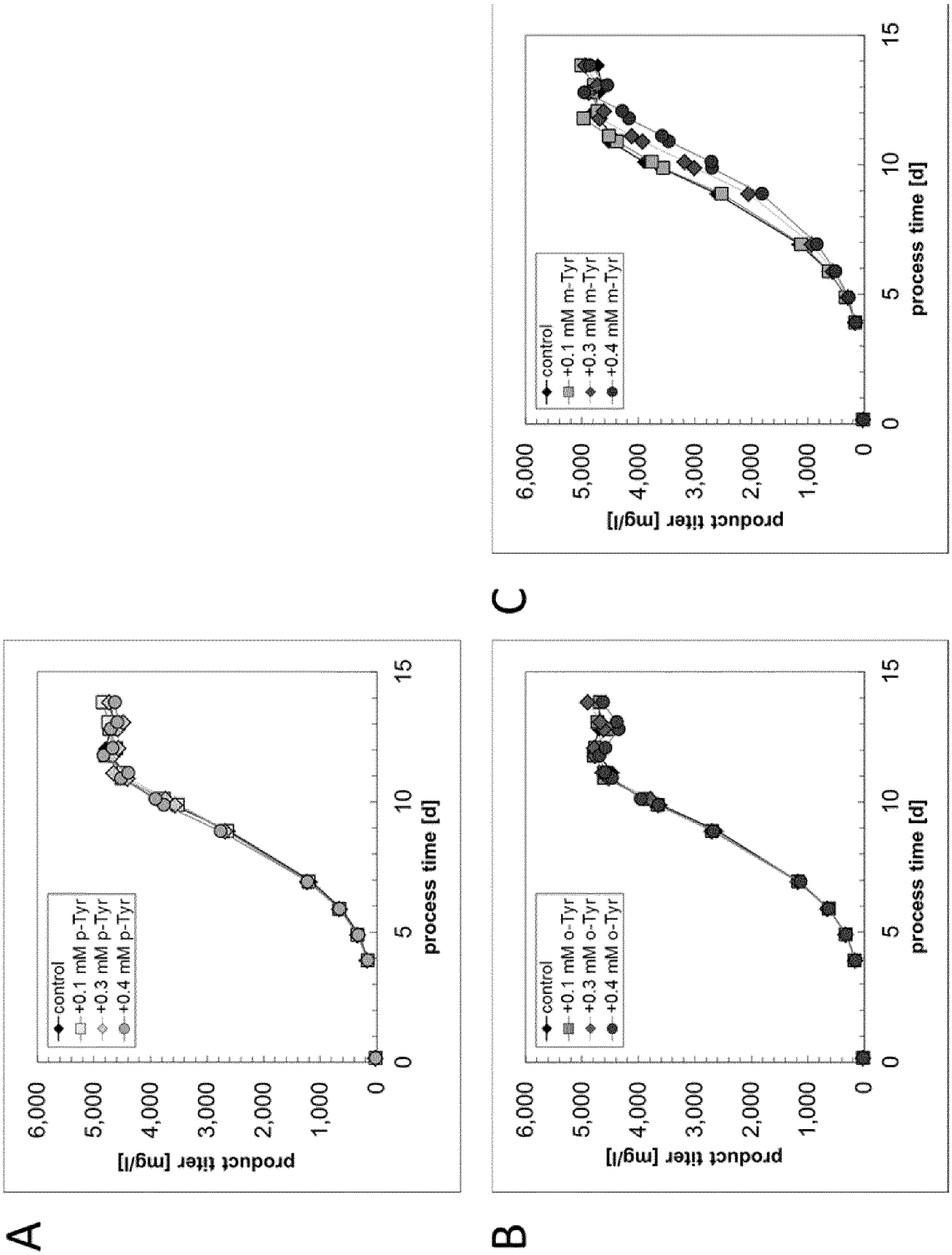

A
B
C
product titer [mg/l]
process time [d]
control
+0.1 mM p-Tyr
+0.3 mM p-Tyr
+0.4 mM p-Tyr
+0.1 mM o-Tyr
+0.3 mM o-Tyr
+0.4 mM o-Tyr
+0.1 mM m-Tyr
+0.3 mM m-Tyr
+0.4 mM m-Tyr
0
1,000
2,000
3,000
4,000
5,000
6,000
0
5
10
15

Fig. 4

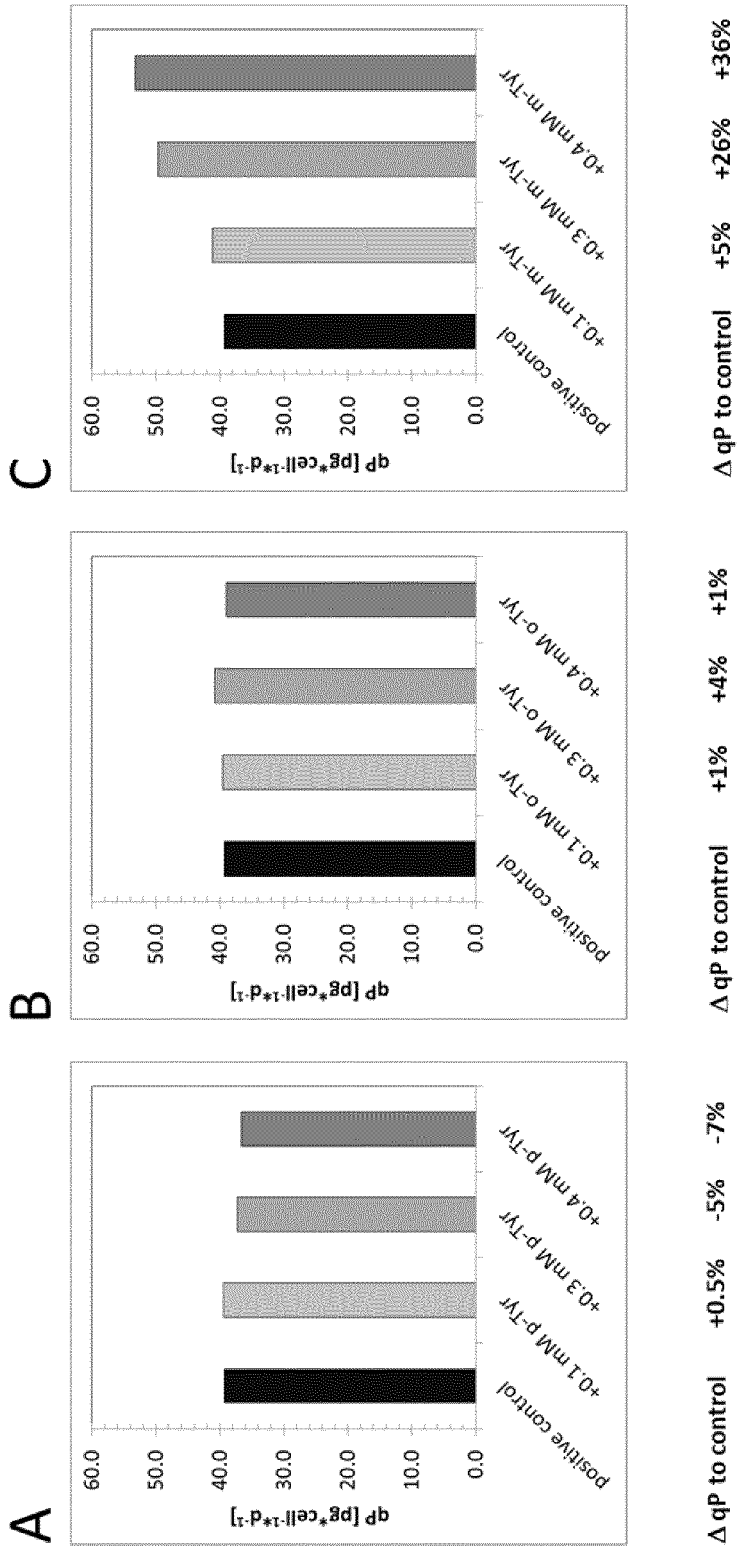

A
B
C
qP [pg*cell-1*d-1]
60.0
50.0
40.0
30.0
20.0
10.0
0.0
positive control
+0.1 mM p-Tyr
+0.3 mM p-Tyr
+0.4 mM p-Tyr
positive control
+0.1 mM o-Tyr
+0.3 mM o-Tyr
+0.4 mM o-Tyr
positive control
+0.1 mM m-Tyr
+0.3 mM m-Tyr
+0.4 mM m-Tyr
Δ qP to control
+0.5%
-5%
-7%
Δ qP to control
+1%
+4%
+1%
Δ qP to control
+5%
+26%
+36%

Fig. 5

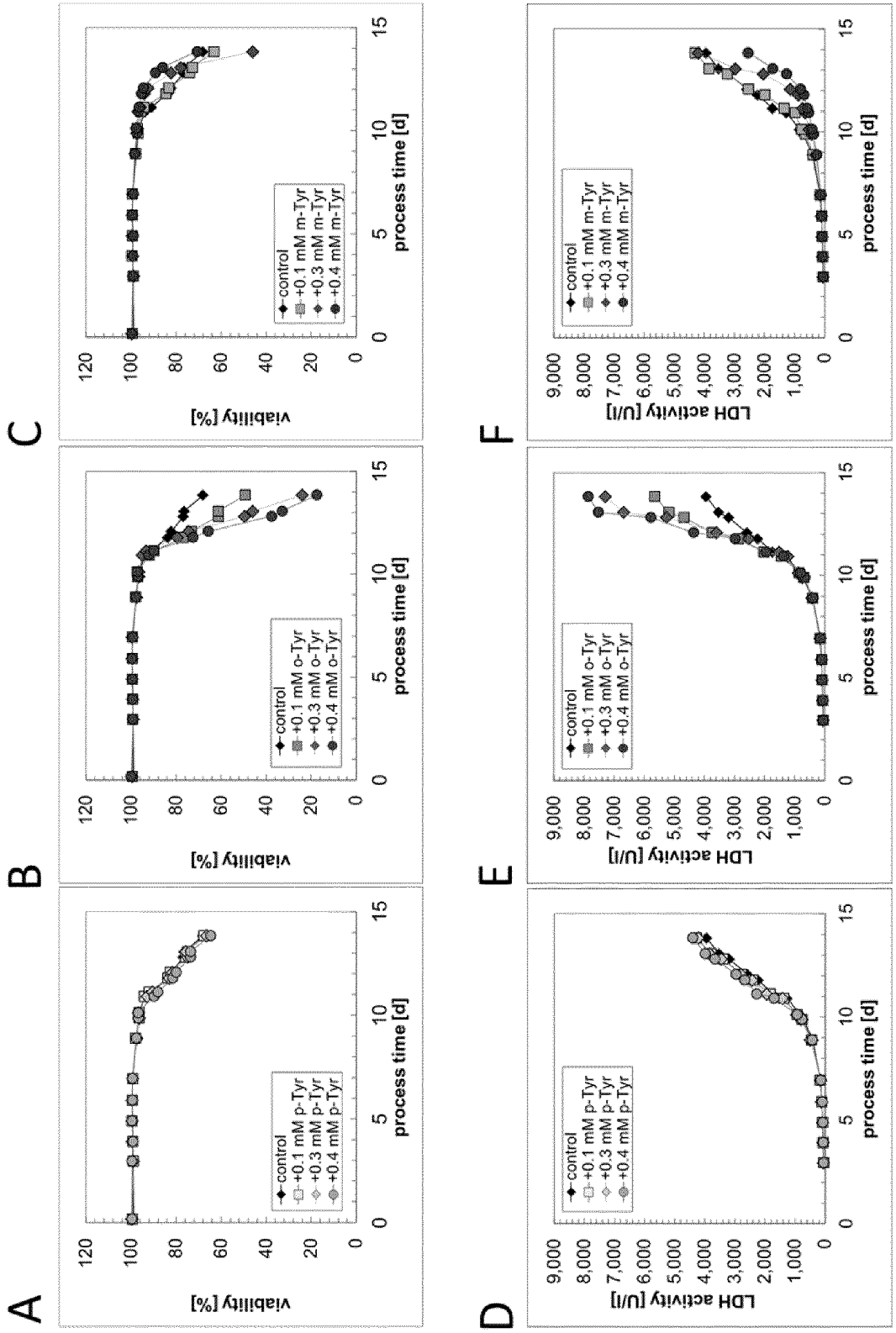

A
B
C
D
E
F
viability [%]
LDH activity [U/l]
process time [d]
control
+0.1 mM p-Tyr
+0.3 mM p-Tyr
+0.4 mM p-Tyr
+0.1 mM o-Tyr
+0.3 mM o-Tyr
+0.4 mM o-Tyr
+0.1 mM m-Tyr
+0.3 mM m-Tyr
+0.4 mM m-Tyr

Fig. 6

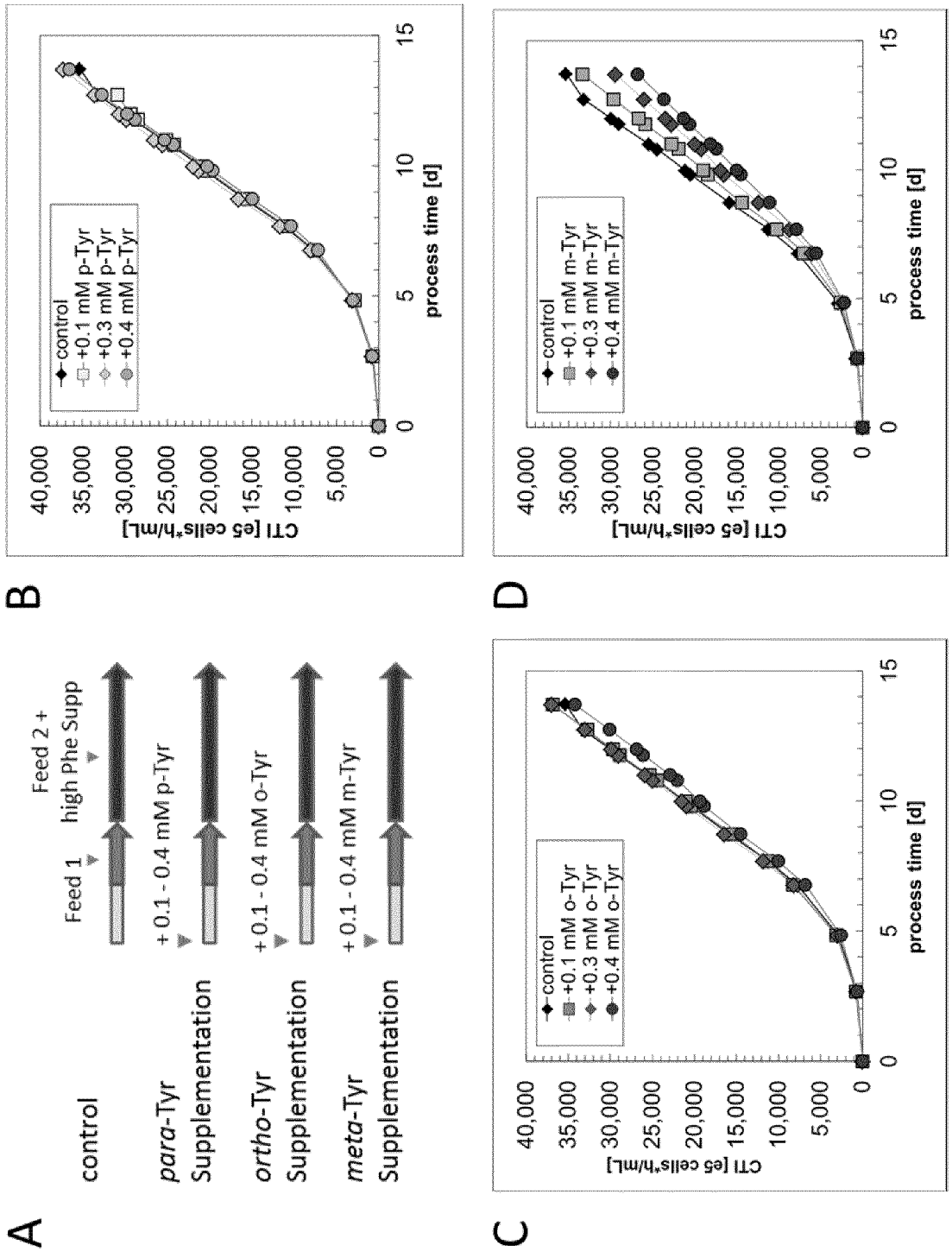

A
control
Feed 1
Feed 2 + high Phe Supp
para-Tyr Supplementation
+ 0.1 - 0.4 mM p-Tyr
ortho-Tyr Supplementation
+ 0.1 - 0.4 mM o-Tyr
meta-Tyr Supplementation
+ 0.1 - 0.4 mM m-Tyr
B
control
+0.1 mM p-Tyr
+0.3 mM p-Tyr
+0.4 mM p-Tyr
CTI [e5 cells*h/mL]
process time [d]
C
control
+0.1 mM o-Tyr
+0.3 mM o-Tyr
+0.4 mM o-Tyr
CTI [e5 cells*h/mL]
process time [d]
D
control
+0.1 mM m-Tyr
+0.3 mM m-Tyr
+0.4 mM m-Tyr
CTI [e5 cells*h/mL]
process time [d]

Fig. 7

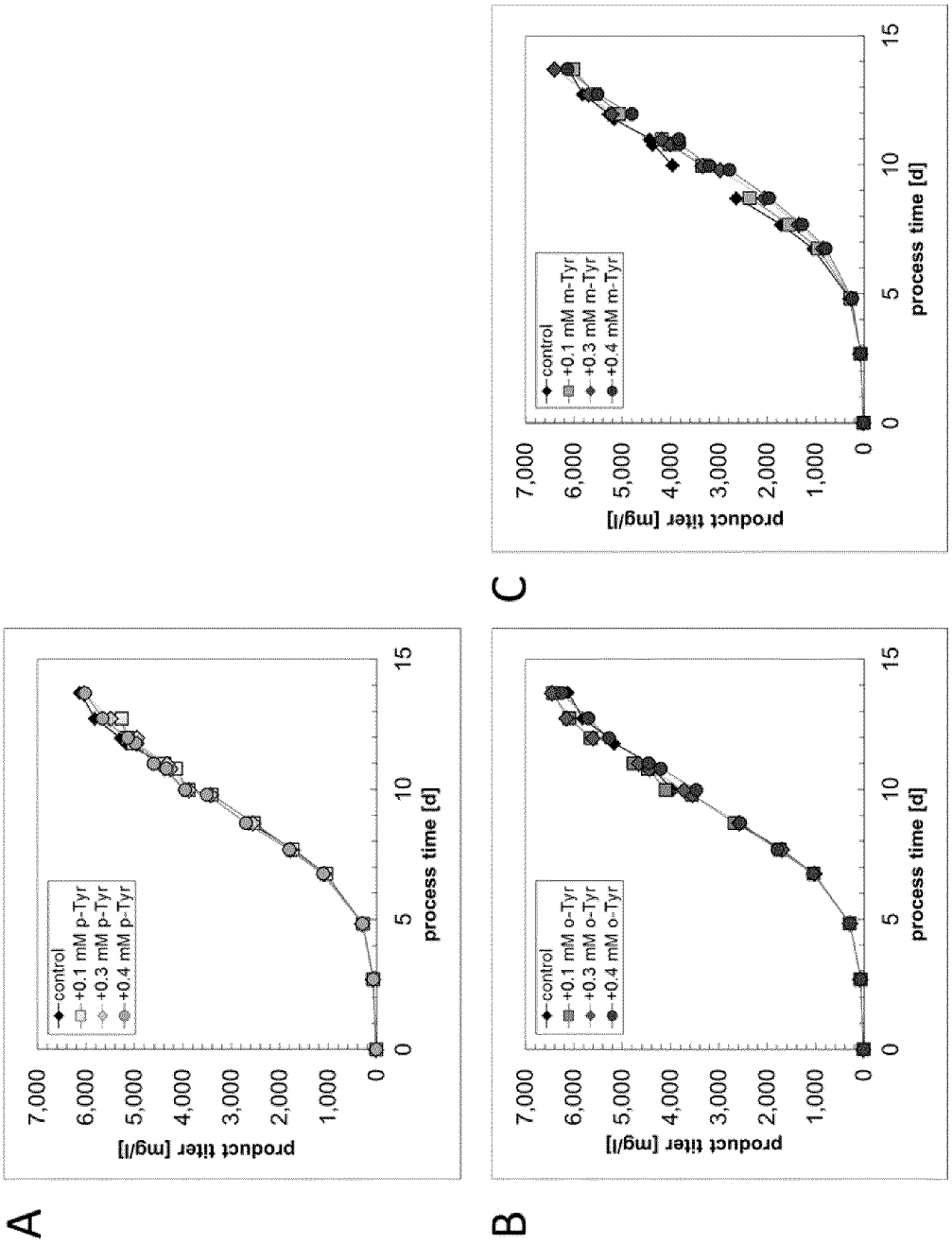
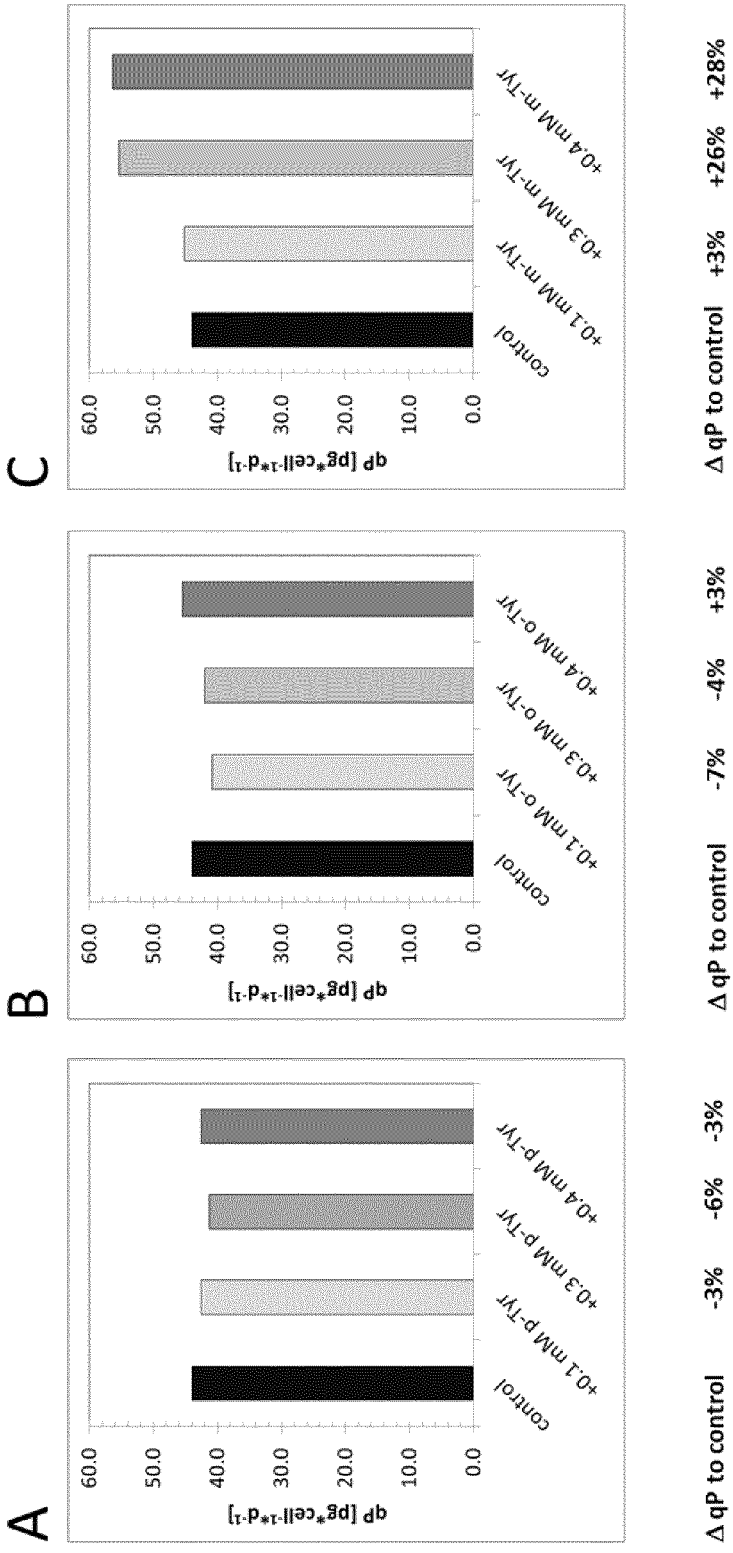

A
B
C
product titer [mg/l]
process time [d]
control
+0.1 mM p-Tyr
+0.3 mM p-Tyr
+0.4 mM p-Tyr
+0.1 mM o-Tyr
+0.3 mM o-Tyr
+0.4 mM o-Tyr
+0.1 mM m-Tyr
+0.3 mM m-Tyr
+0.4 mM m-Tyr
0
1,000
2,000
3,000
4,000
5,000
6,000
7,000
0
5
10
15

Fig. 8


A
B
C
qP [pg*cell-1*d-1]
60.0
50.0
40.0
30.0
20.0
10.0
0.0
control
+0.1 mM p-Tyr
+0.3 mM p-Tyr
+0.4 mM p-Tyr
control
+0.1 mM o-Tyr
+0.3 mM o-Tyr
+0.4 mM o-Tyr
control
+0.1 mM m-Tyr
+0.3 mM m-Tyr
+0.4 mM m-Tyr
Δ qP to control
-3%
-6%
-3%
Δ qP to control
-7%
-4%
+3%
Δ qP to control
+3%
+26%
+28%