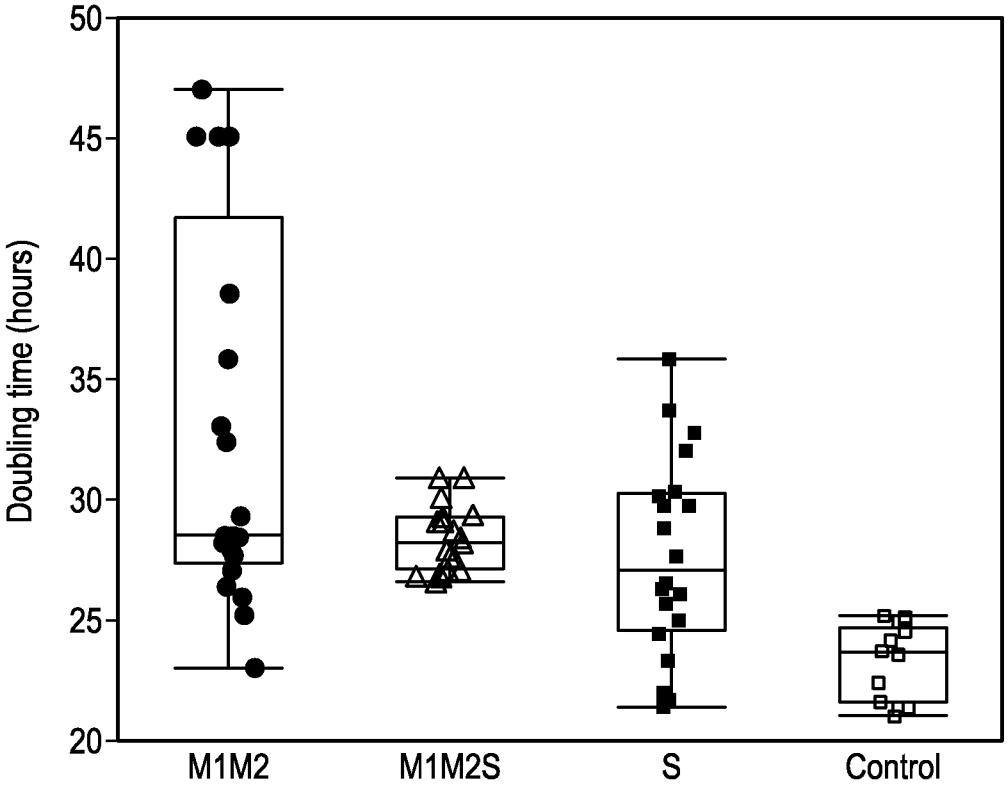
Doubling time (hours)
50
45
40
35
30
25
20
M1M2
M1M2S
S
Control

Fig. 1

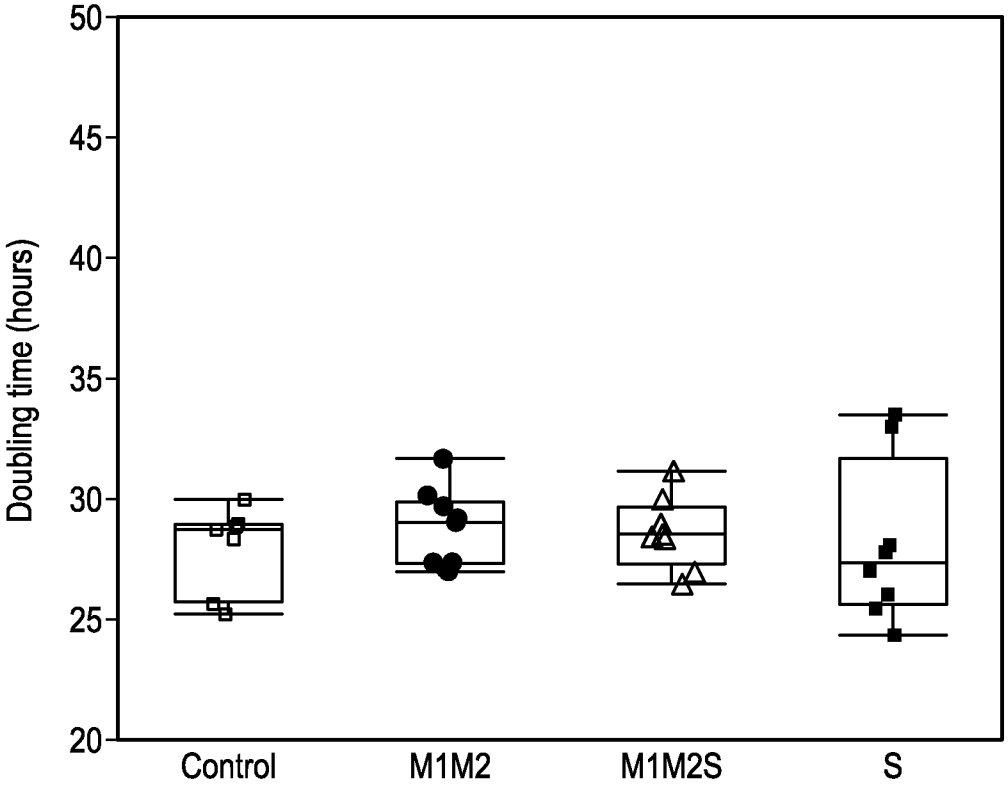
Doubling time (hours)
50
45
40
35
30
25
20
Control
M1M2
M1M2S
S

Fig. 2

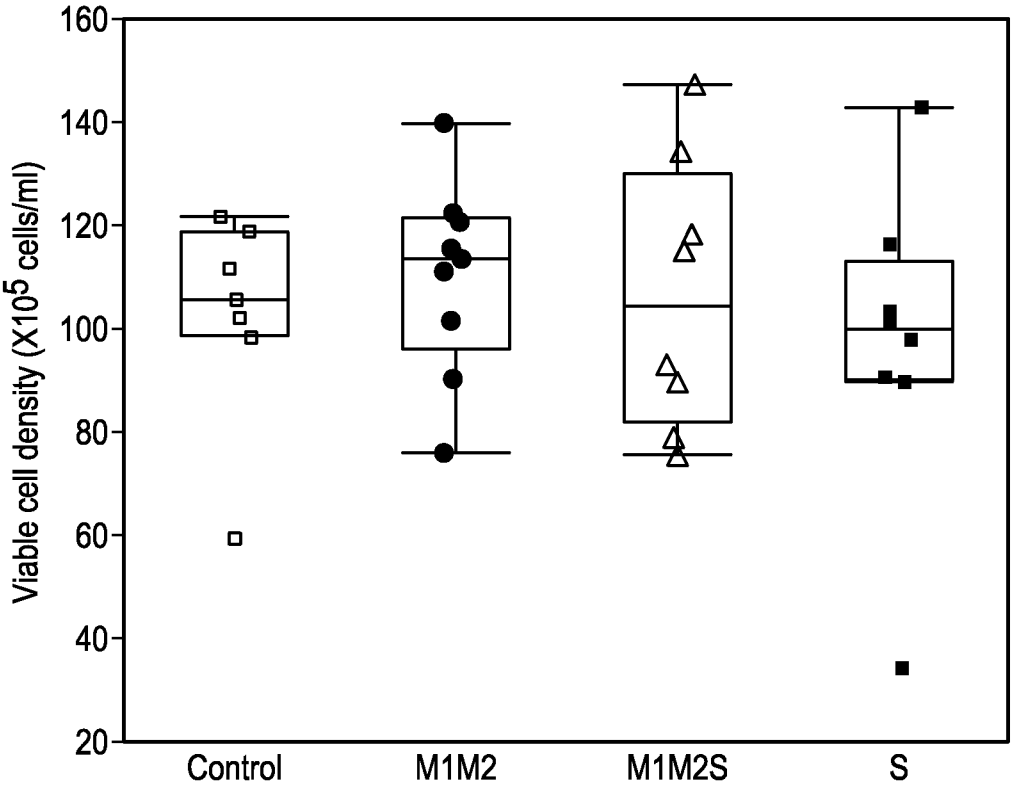
160
140
120
100
80
60
40
20
Viable cell density (X10^5 cells/ml)
Control
M1M2
M1M2S
S

Fig. 3

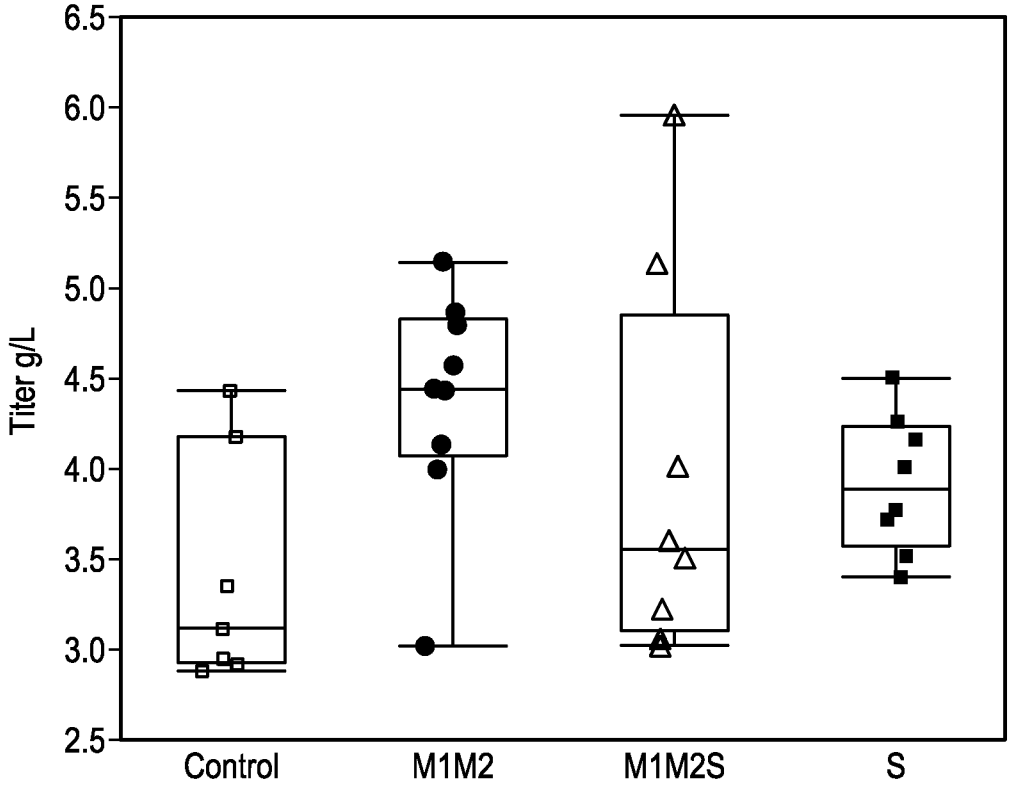
6.5
6.0
5.5
5.0
4.5
4.0
3.5
3.0
2.5
Titer g/L
Control
M1M2
M1M2S
S

Fig. 4

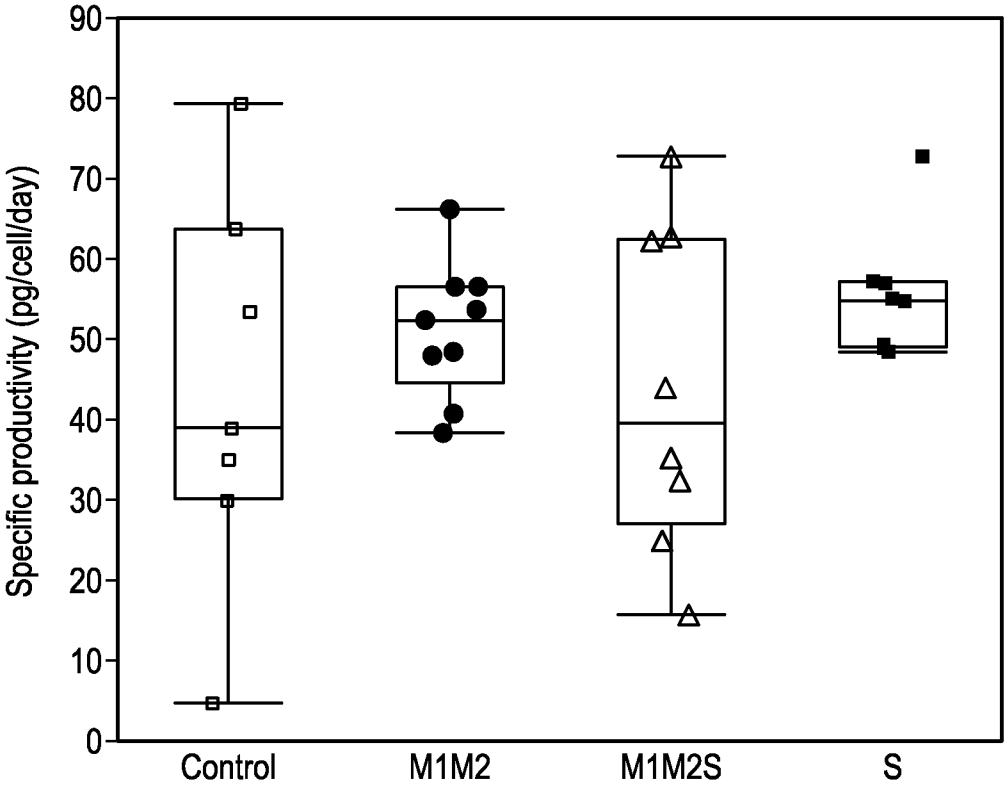
Specific productivity (pg/cell/day)
90
80
70
60
50
40
30
20
10
0
Control
M1M2
M1M2S
S

Fig. 5

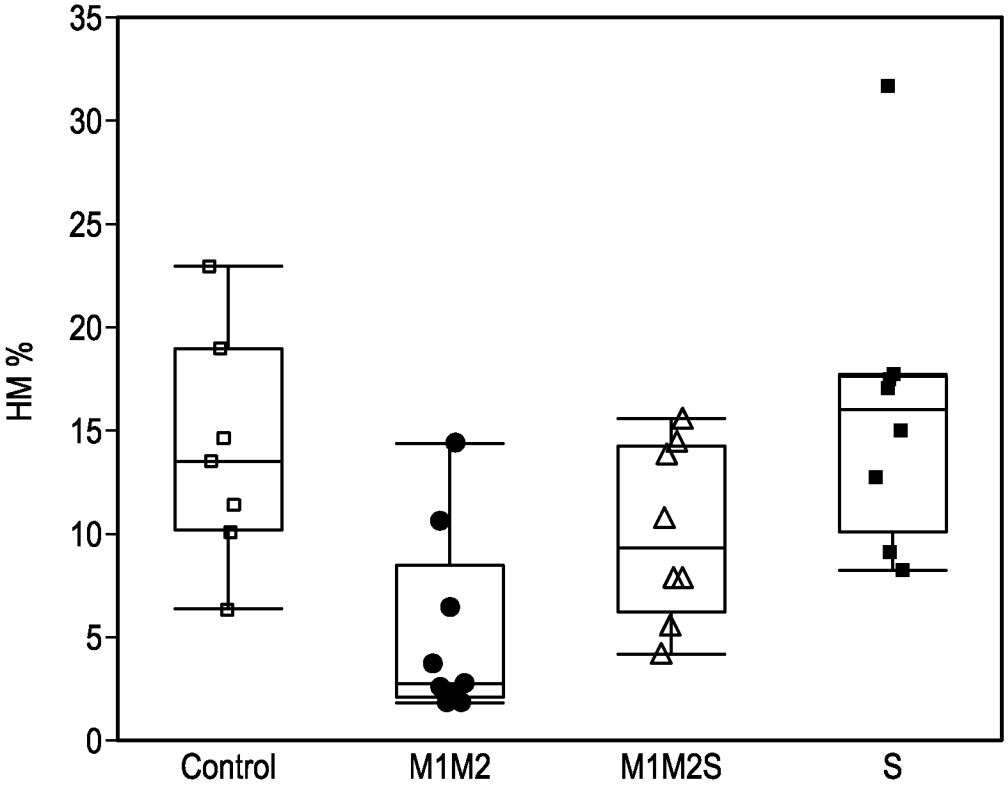
HM %
35
30
25
20
15
10
5
0
Control
M1M2
M1M2S
S

Fig. 6