Figure 1

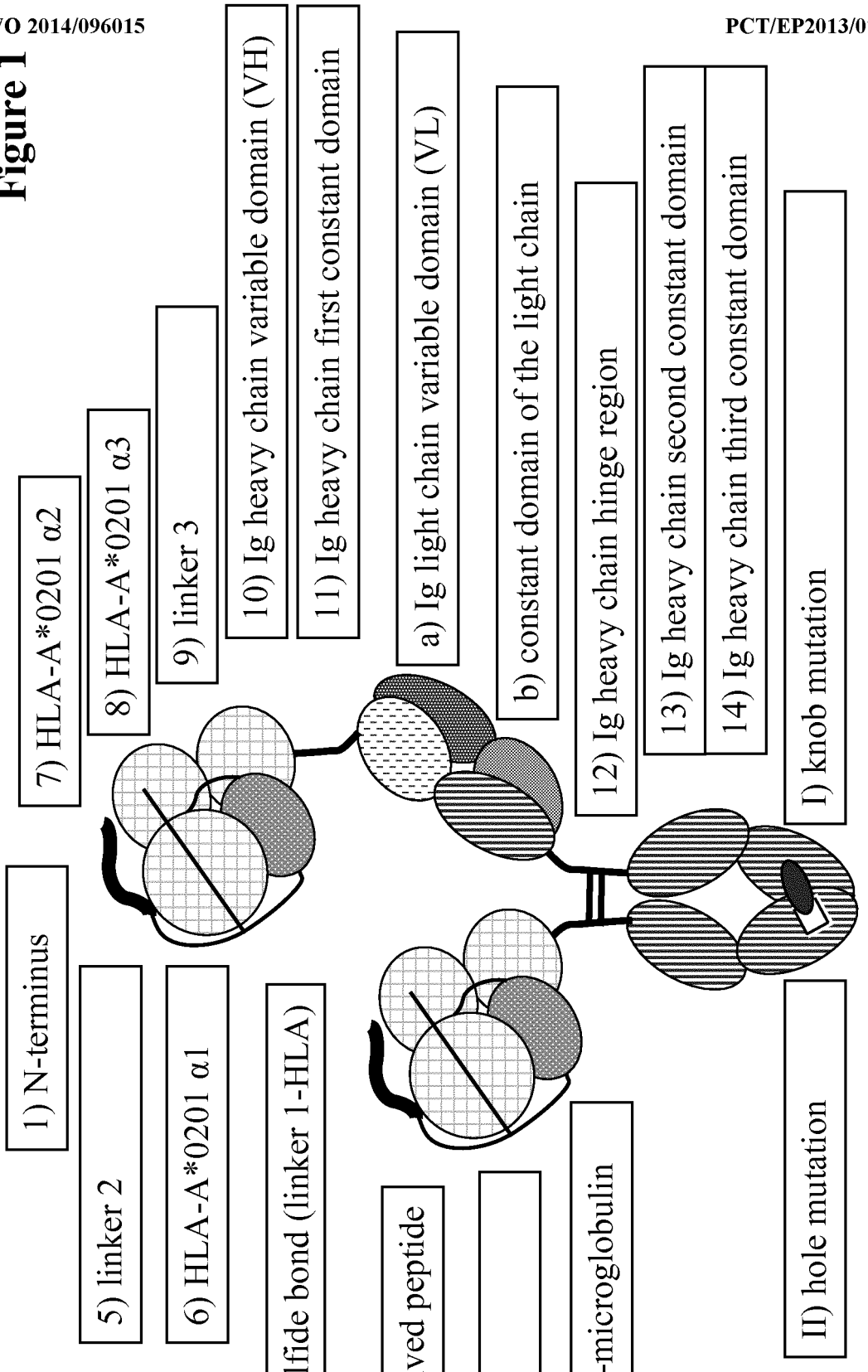

1) N-terminus
5) linker 2
6) HLA-A*0201 α1
3-6) disulfide bond (linker 1-HLA)
2) virus-derived peptide
3) linker 1
4) β-2-microglobulin
7) HLA-A*0201 α2
8) HLA-A*0201 α3
9) linker 3
10) Ig heavy chain variable domain (VH)
11) Ig heavy chain first constant domain
a) Ig light chain variable domain (VL)
b) constant domain of the light chain
12) Ig heavy chain hinge region
13) Ig heavy chain second constant domain
14) Ig heavy chain third constant domain
I) knob mutation
II) hole mutation

Figure 2

signal peptide
virus-derived-peptide
ß2-microglobulin
MHCI α1-α2-α3
antibody light chain / antibody heavy chain hinge region comprising polypeptide
signal peptide
ß2-microglobulin
MHCI α1-α2-α3
antibody light chain / antibody heavy chain hinge region comprising polypeptide
signal peptide
virus-derived-peptide
MHCI α1-α2-α3
ß2-microglobulin
antibody light chain / antibody heavy chain hinge region comprising polypeptide
signal peptide
MHCI α1-α2-α3
ß2-microglobulin
antibody light chain / antibody heavy chain hinge region comprising polypeptide

Figure 3

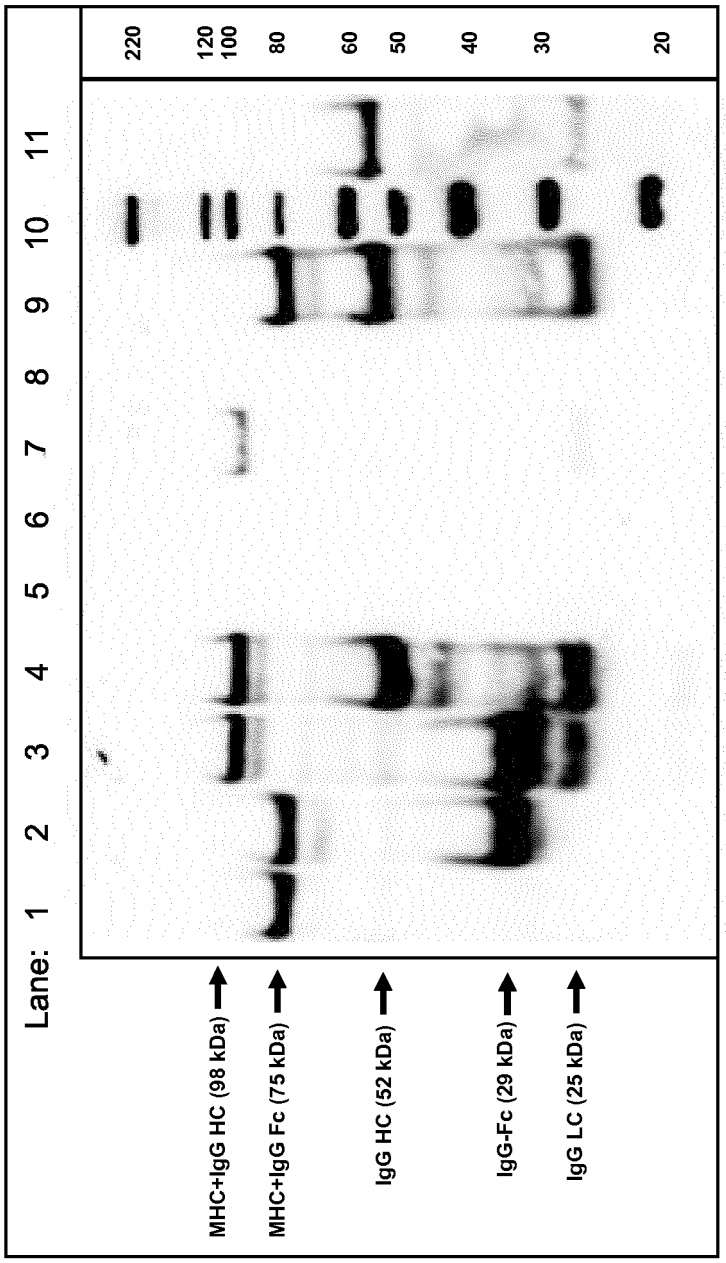

Lane: 1 2 3 4 5 6 7 8 9 10 11
220
120
100
80
60
50
40
30
20
MHC+IgG HC (98 kDa)
MHC+IgG Fc (75 kDa)
IgG HC (52 kDa)
IgG-Fc (29 kDa)
IgG LC (25 kDa)

Figure 4A

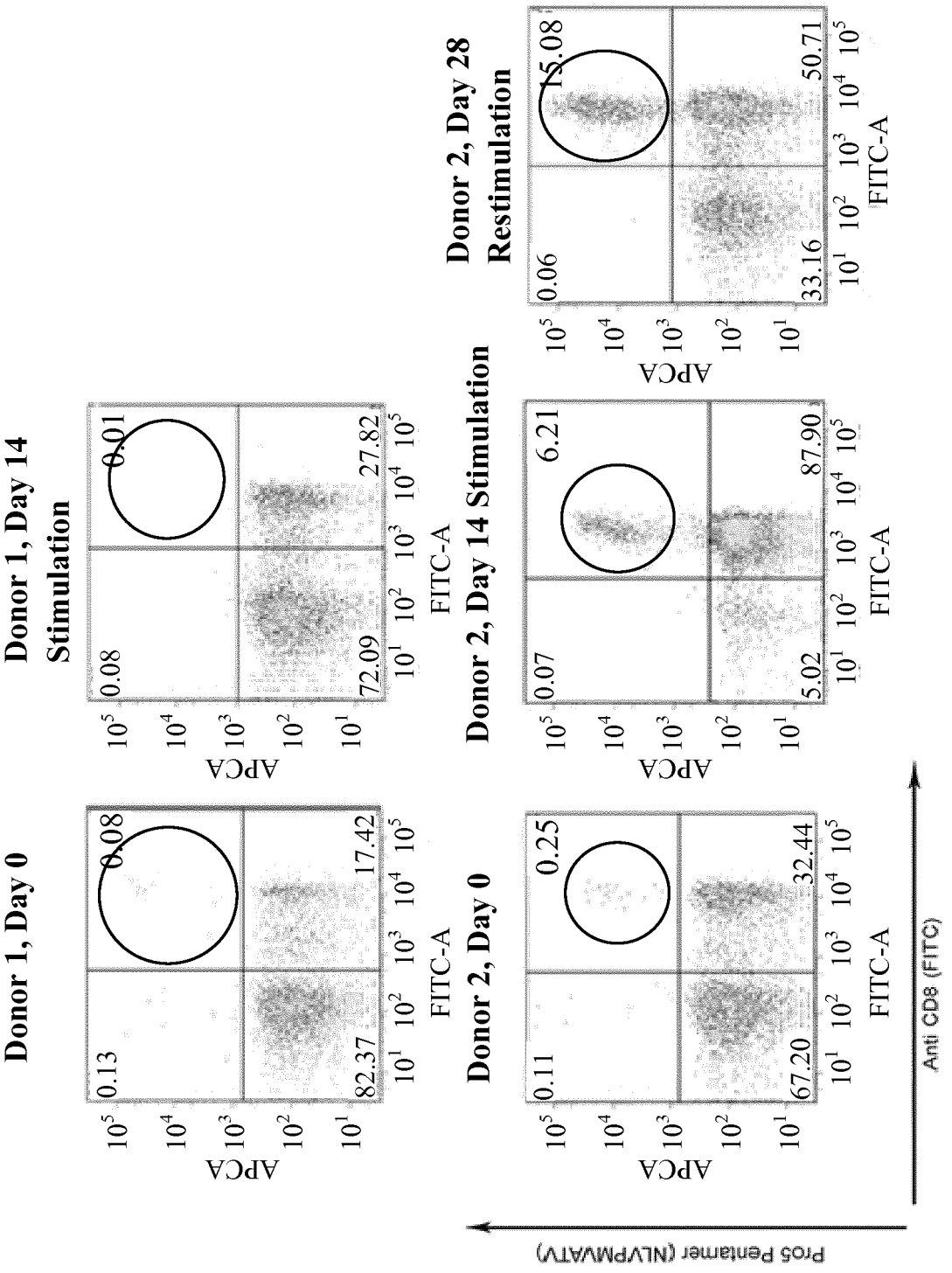

Donor 1, Day 0
Donor 1, Day 14 Stimulation
Donor 2, Day 0
Donor 2, Day 14 Stimulation
Donor 2, Day 28 Restimulation
0.13
0.08
82.37
17.42
0.08
72.09
0.01
27.82
0.11
67.20
0.25
32.44
0.07
5.02
6.21
87.90
0.06
33.16
5.08
50.71
APCA
FITC-A
Anti CD8 (FITC)
Pro5 Pentamer (NLVPMVATV)

Figure 4B

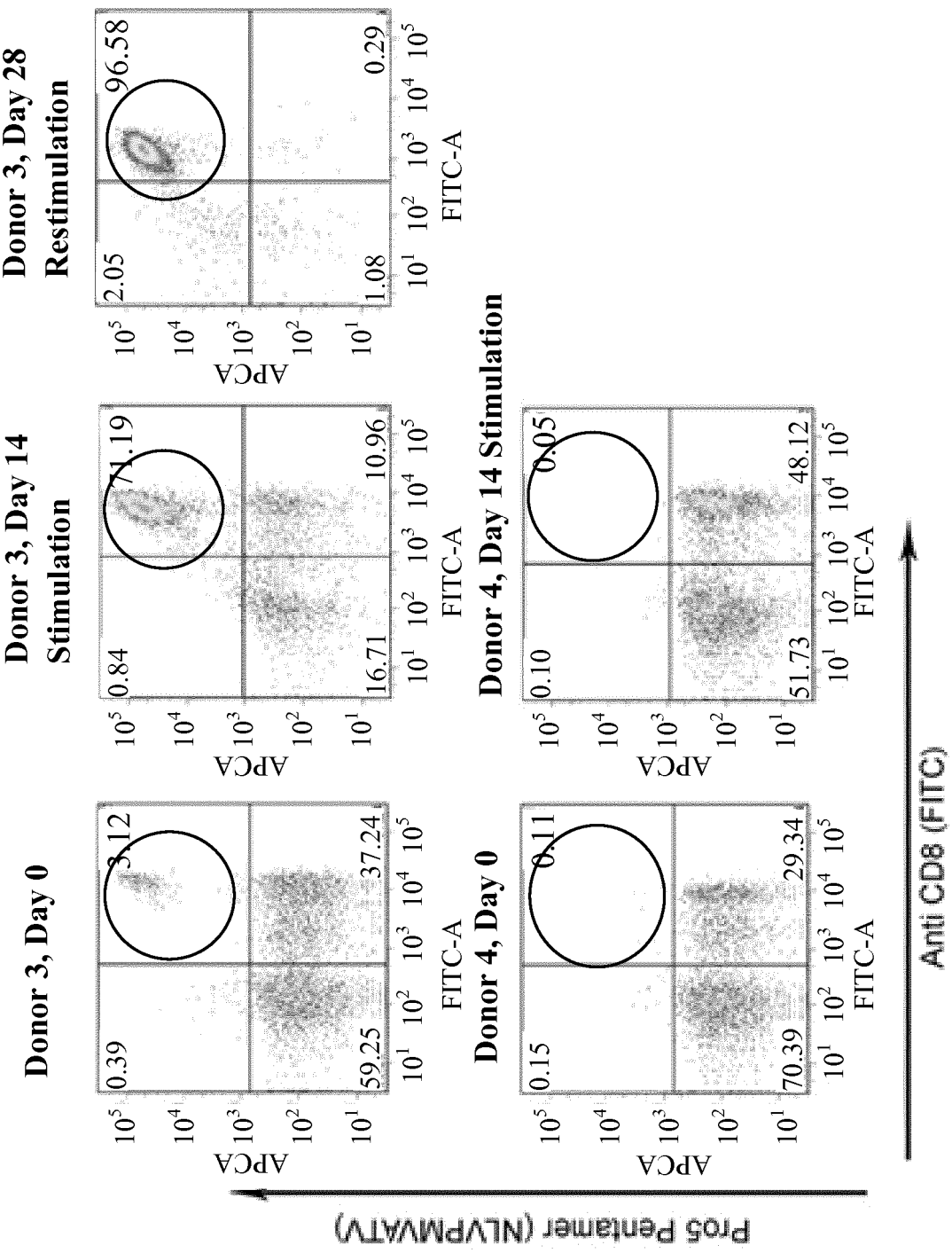

Donor 3, Day 0
Donor 3, Day 14 Stimulation
Donor 3, Day 28 Restimulation
Donor 4, Day 0
Donor 4, Day 14 Stimulation
Prot5 Pentamer (NLVPMVATV)
Anti CD8 (FITC)
APCA
FITC-A
0.39
3.12
59.25
37.24
0.84
71.19
16.71
10.96
2.05
96.58
1.08
0.29
0.15
0.11
70.39
29.34
0.10
0.05
51.73
48.12

Figure 5

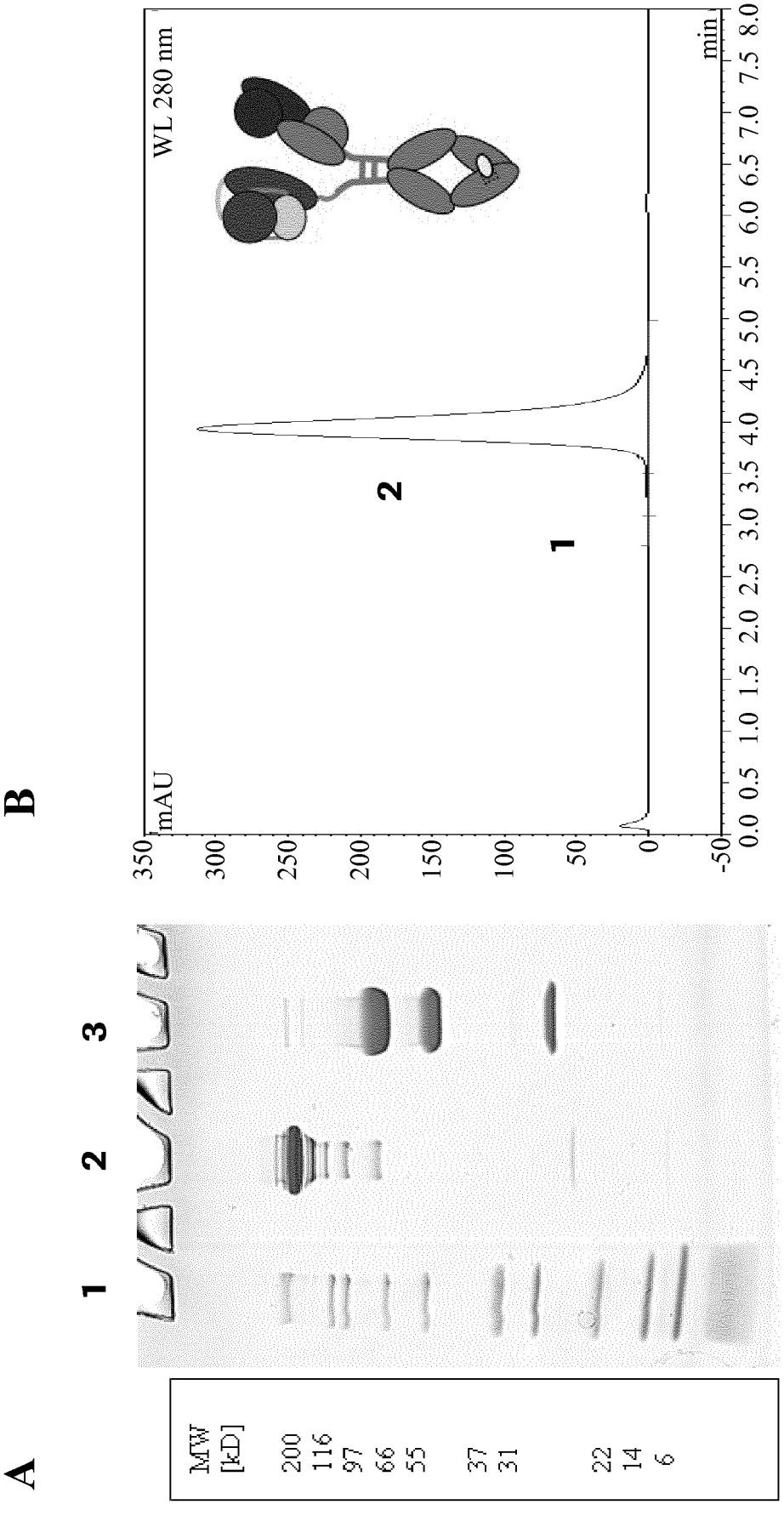


Figure 6A

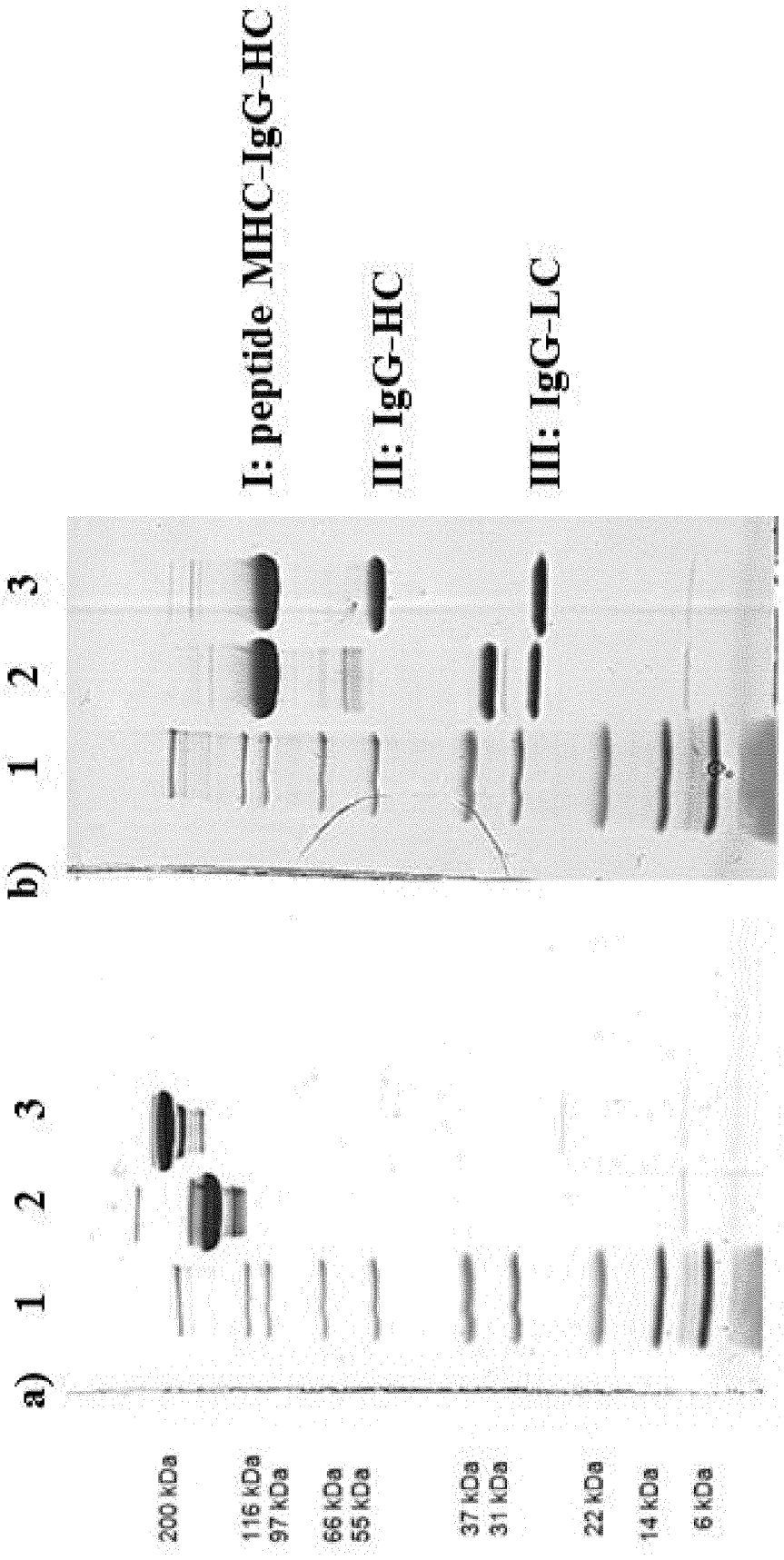

I: peptide MHC-IgG-HC
II: IgG-HC
III: IgG-LC
b)
1
2
3
a)
1
2
3
200 kDa
116 kDa
97 kDa
66 kDa
55 kDa
37 kDa
31 kDa
22 kDa
14 kDa
6 kDa

Figure 6B

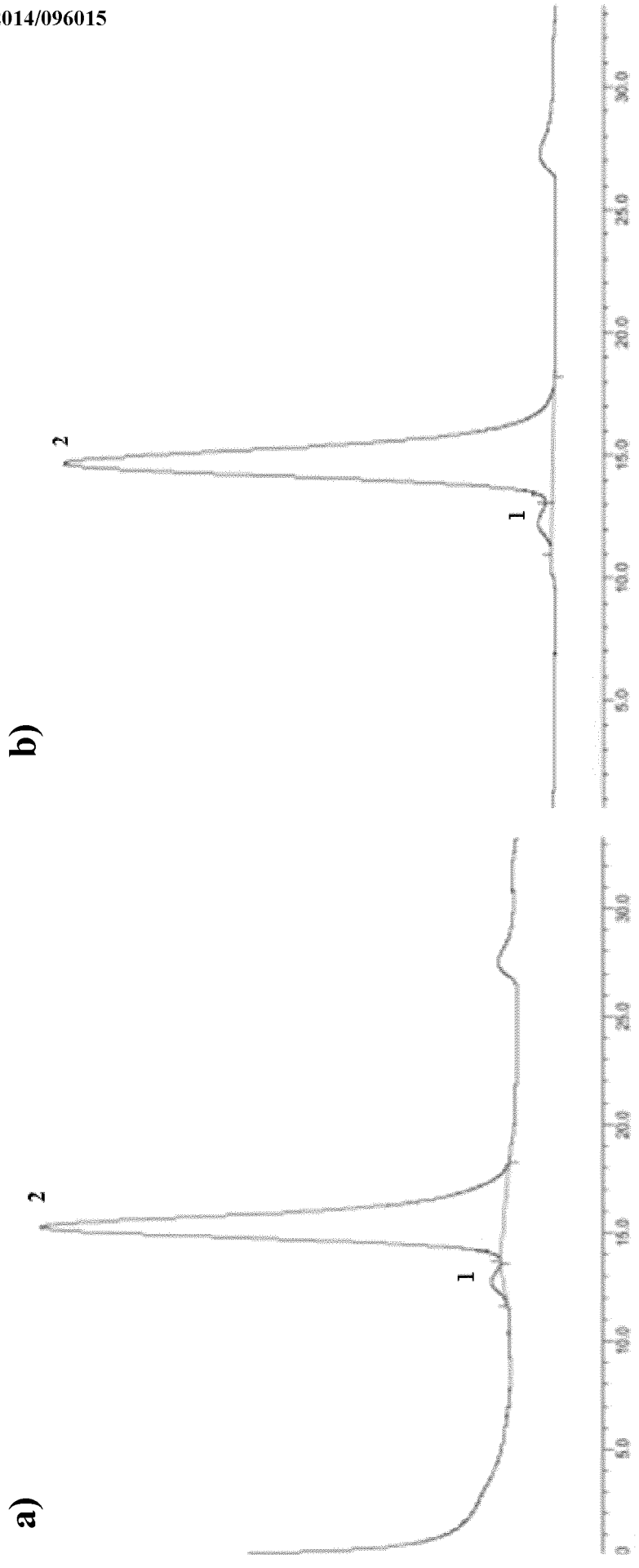


Figure 6C

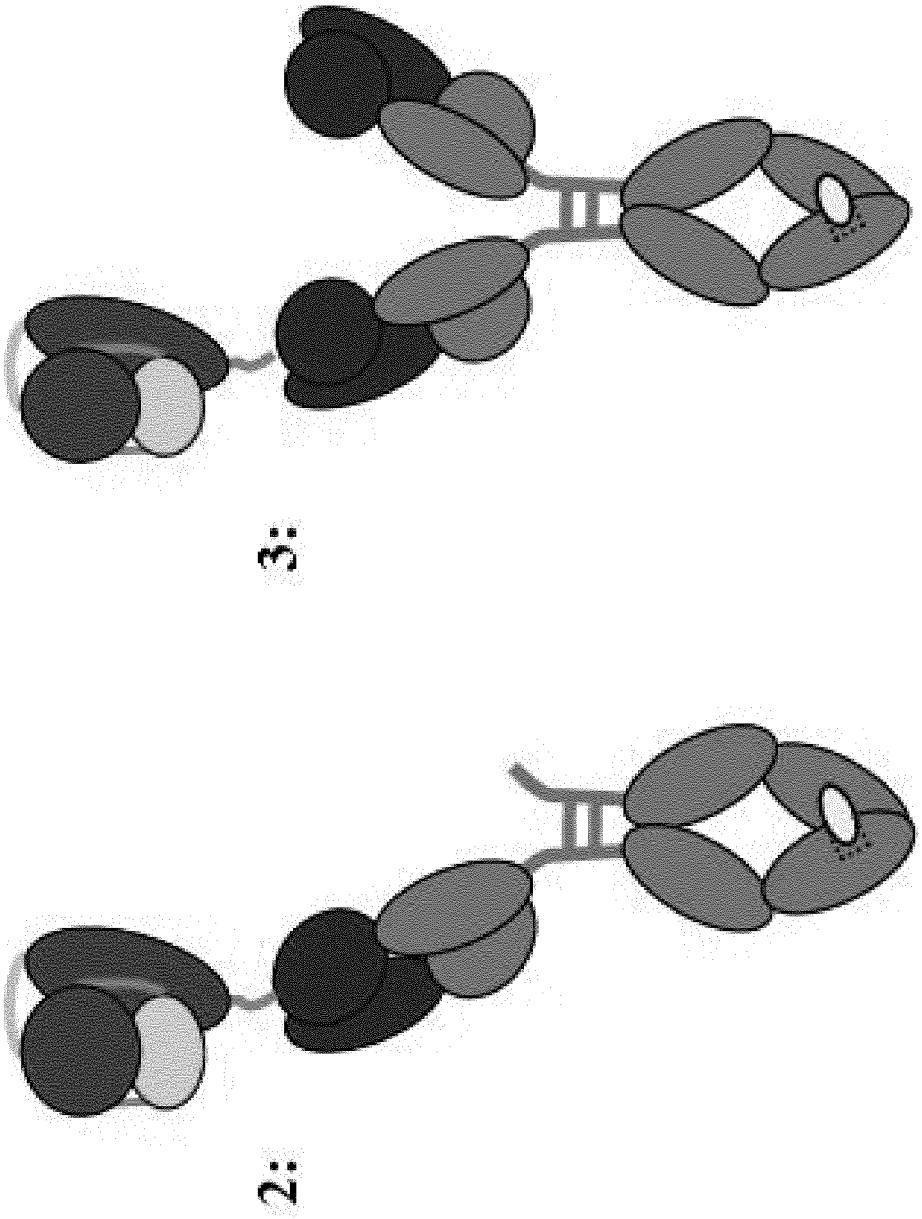


Figure 7

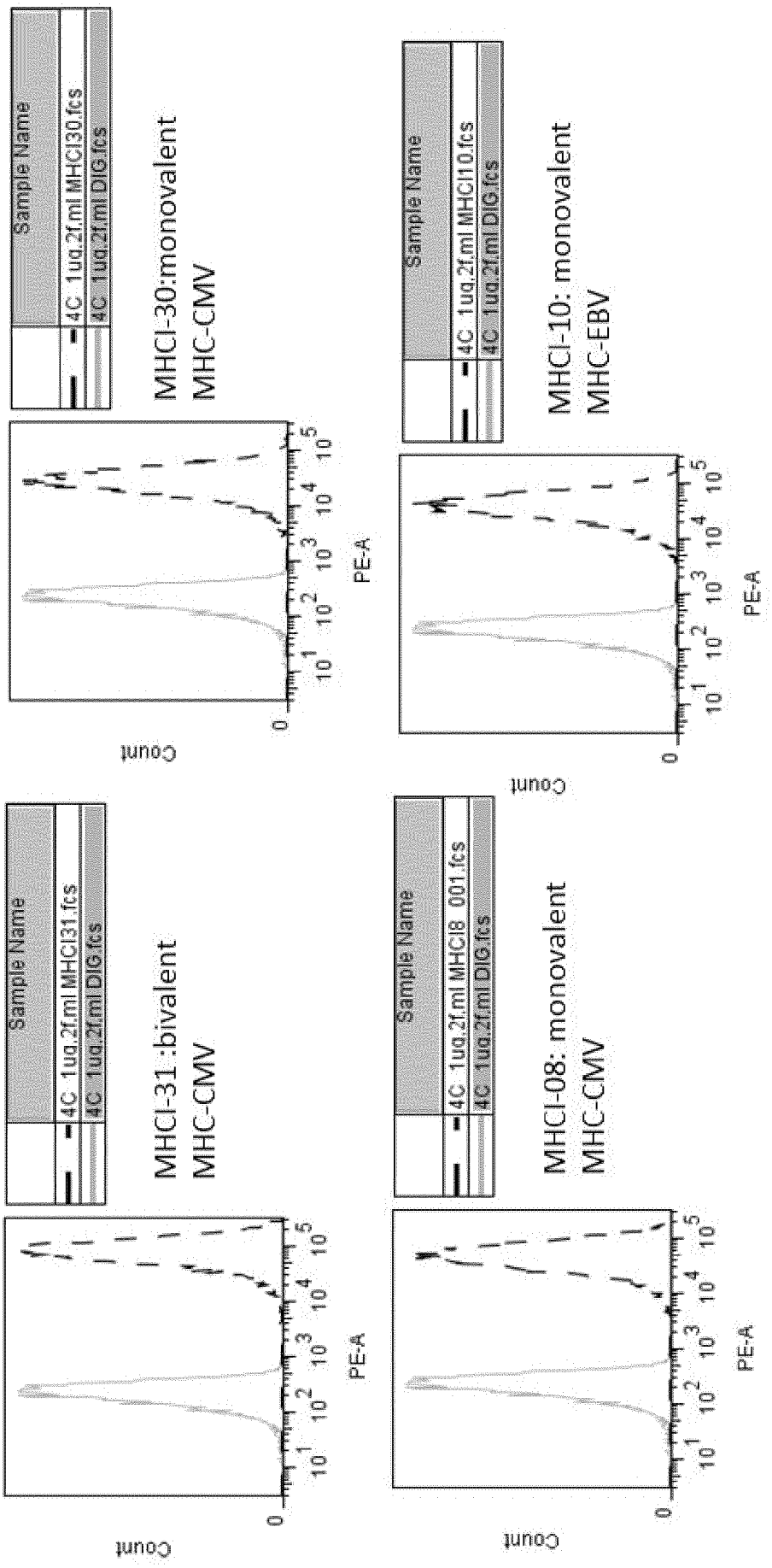
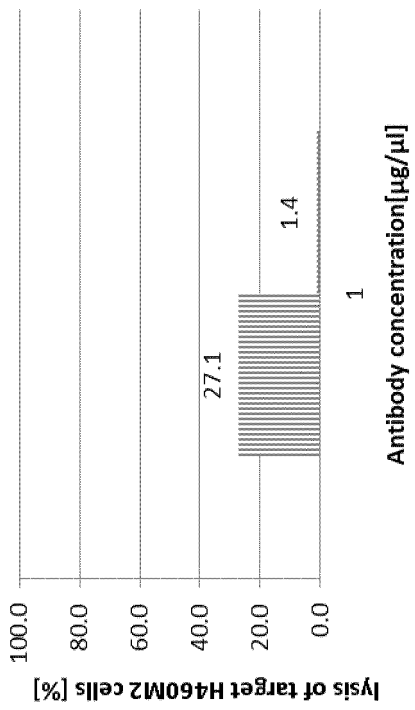
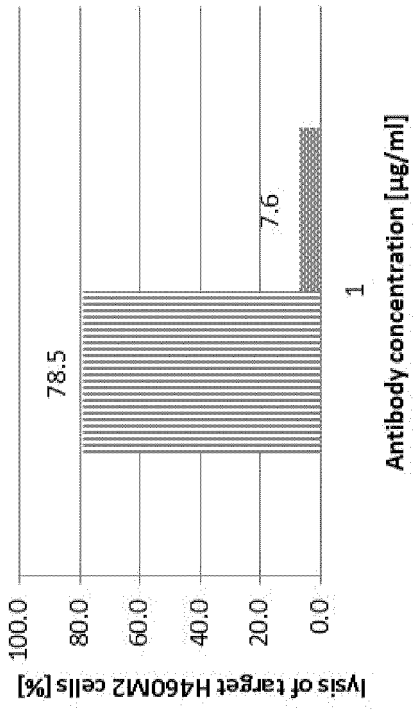

Sample Name
4C 1uq.2f.ml MHCI30.fcs
4C 1uq.2f.ml DIG.fcs
MHCI-30:monovalent
MHC-CMV
Sample Name
4C 1uq.2f.ml MHCI10.fcs
4C 1uq.2f.ml DIG.fcs
MHCI-10: monovalent
MHC-EBV
Sample Name
4C 1uq.2f.ml MHCI31.fcs
4C 1uq.2f.ml DIG.fcs
MHCI-31 :bivalent
MHC-CMV
Sample Name
4C 1uq.2f.ml MHCI8 001.fcs
4C 1uq.2f.ml DIG.fcs
MHCI-08: monovalent
MHC-CMV
Count
PE-A
0
10^1
10^2
10^3
10^4
10^5

Figure 8


c)
Lysis of target H460M2 cells [%]
100.0
80.0
60.0
40.0
20.0
0.0
27.1
1.4
1
Antibody concentration[µg/µl]


a)
Lysis of target H460M2 cells [%]
100.0
80.0
60.0
40.0
20.0
0.0
78.5
7.6
1
Antibody concentration [µg/ml]

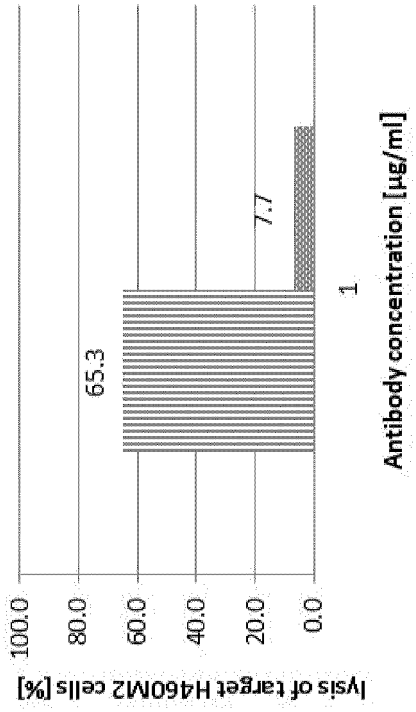
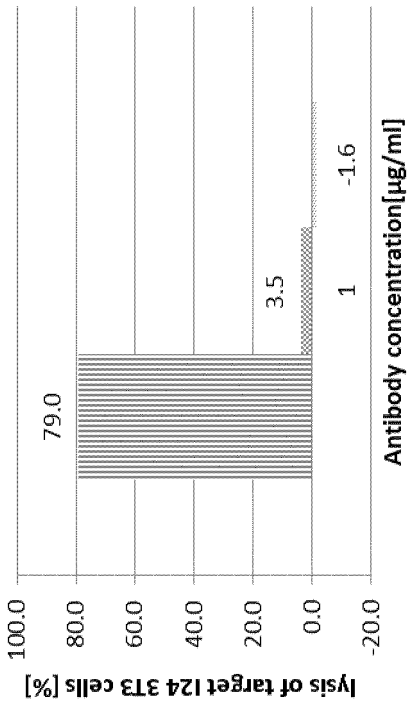
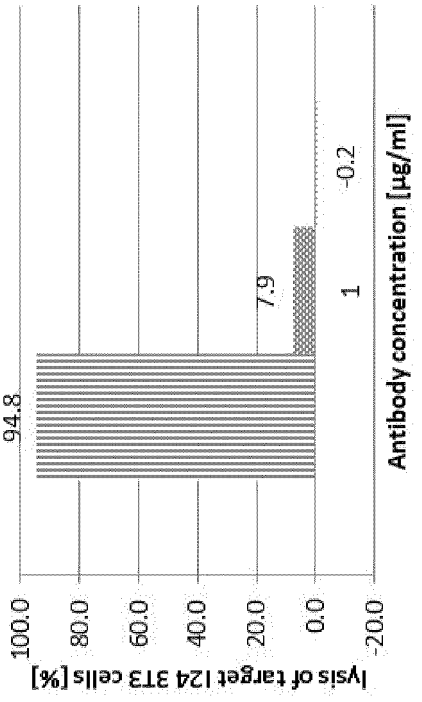

b)
Lysis of target H460M2 cells [%]
100.0
80.0
60.0
40.0
20.0
0.0
65.3
7.7
1
Antibody concentration [µg/ml]

Figure 9


c)
Lysis of target 124 3T3 cells [%]
100.0
80.0
60.0
40.0
20.0
0.0
-20.0
79.0
3.5
-1.6
1
Antibody concentration[µg/ml]


a)
Lysis of target 124 3T3 cells [%]
100.0
80.0
60.0
40.0
20.0
0.0
-20.0
94.8
7.9
-0.2
1
Antibody concentration [µg/ml]

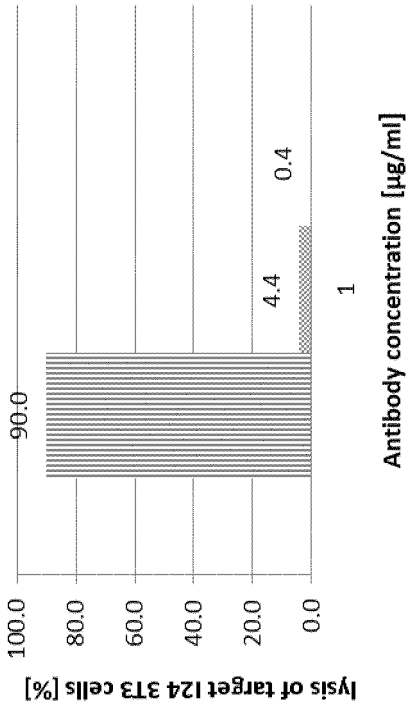
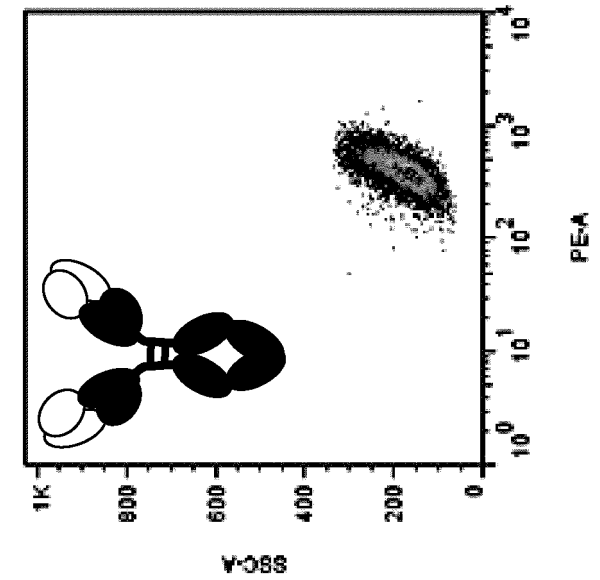
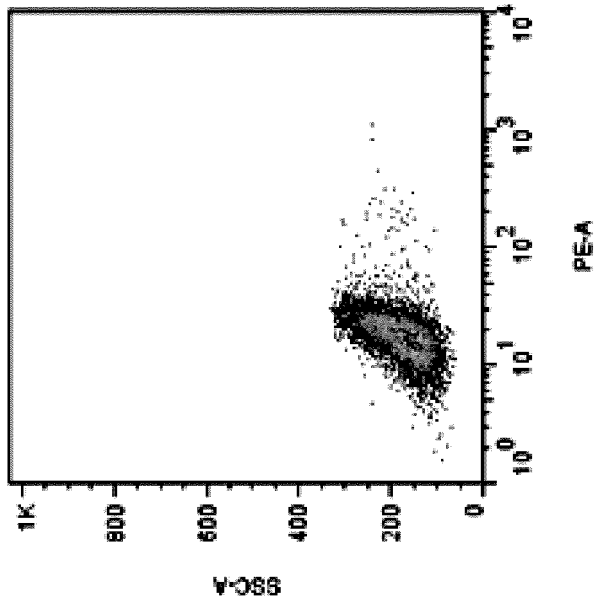

b)
Lysis of target 124 3T3 cells [%]
100.0
80.0
60.0
40.0
20.0
0.0
90.0
4.4
0.4
1
Antibody concentration [µg/ml]

Figure 10


c)
SSC-A
PE-A
1K
800
600
400
200
0
10^0
10^1
10^2
10^3
10^4


a)
SSC-A
PE-A
1K
800
600
400
200
0
10^0
10^1
10^2
10^3
10^4

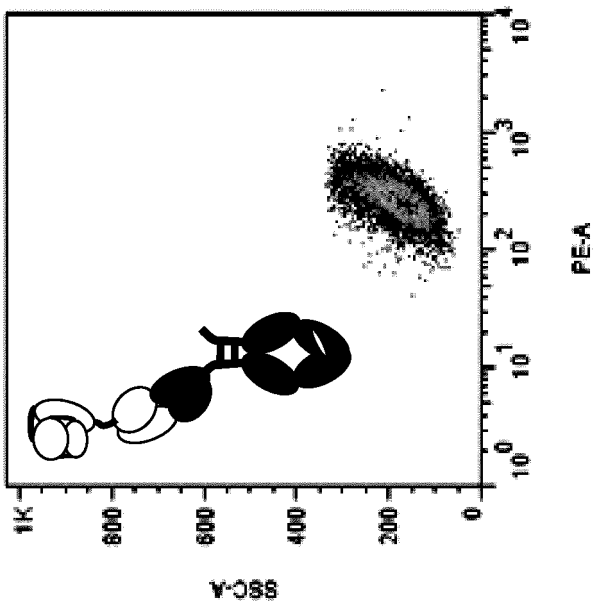

b)
SSC-A
PE-A
1K
800
600
400
200
0
10^0
10^1
10^2
10^3
10^4

Figure 11

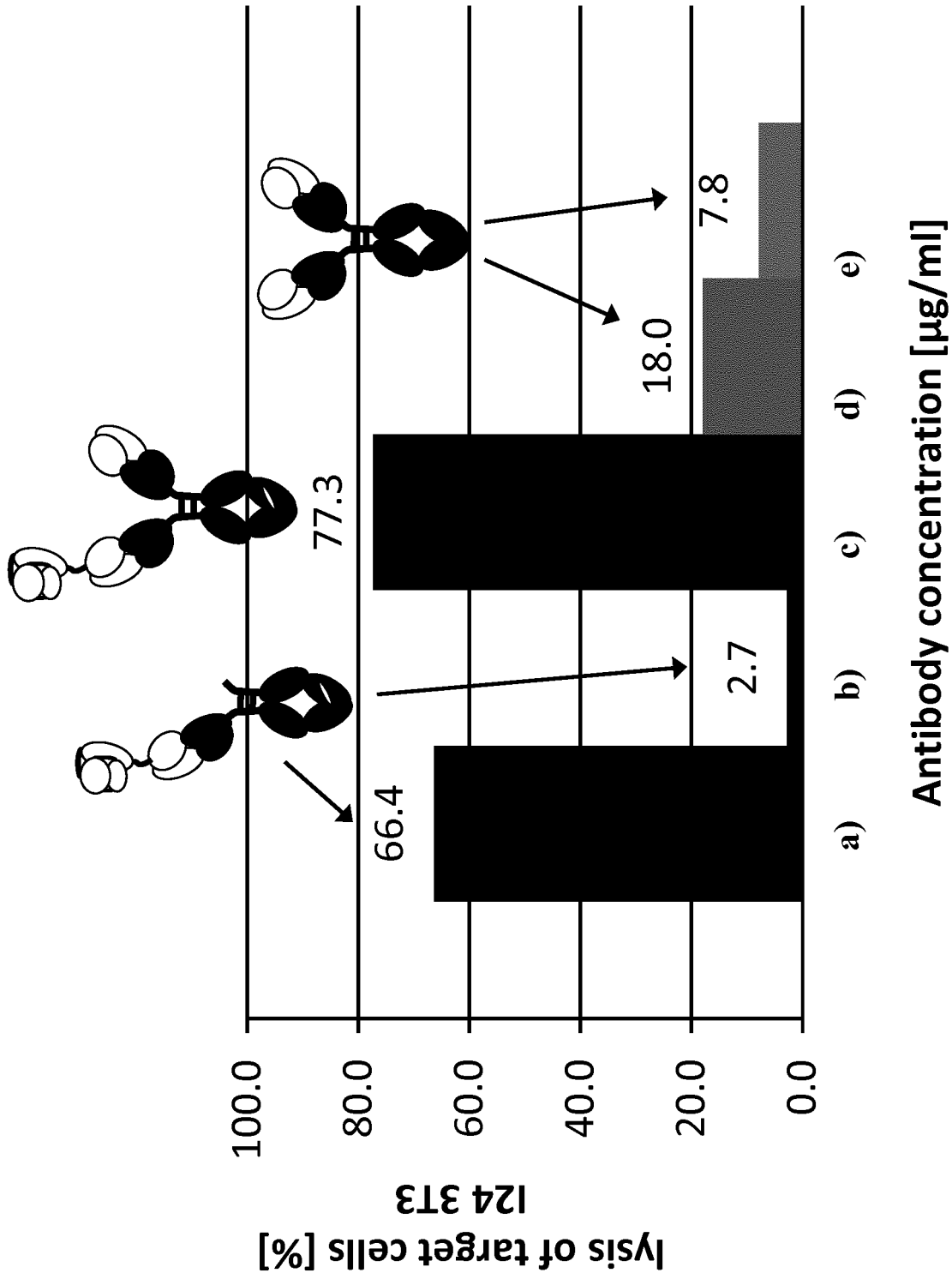

Lysis of target cells [%]
124 3T3
100.0
80.0
60.0
40.0
20.0
0.0
66.4
77.3
2.7
18.0
7.8
a)
b)
c)
d)
e)
Antibody concentration [µg/ml]

Figure 12

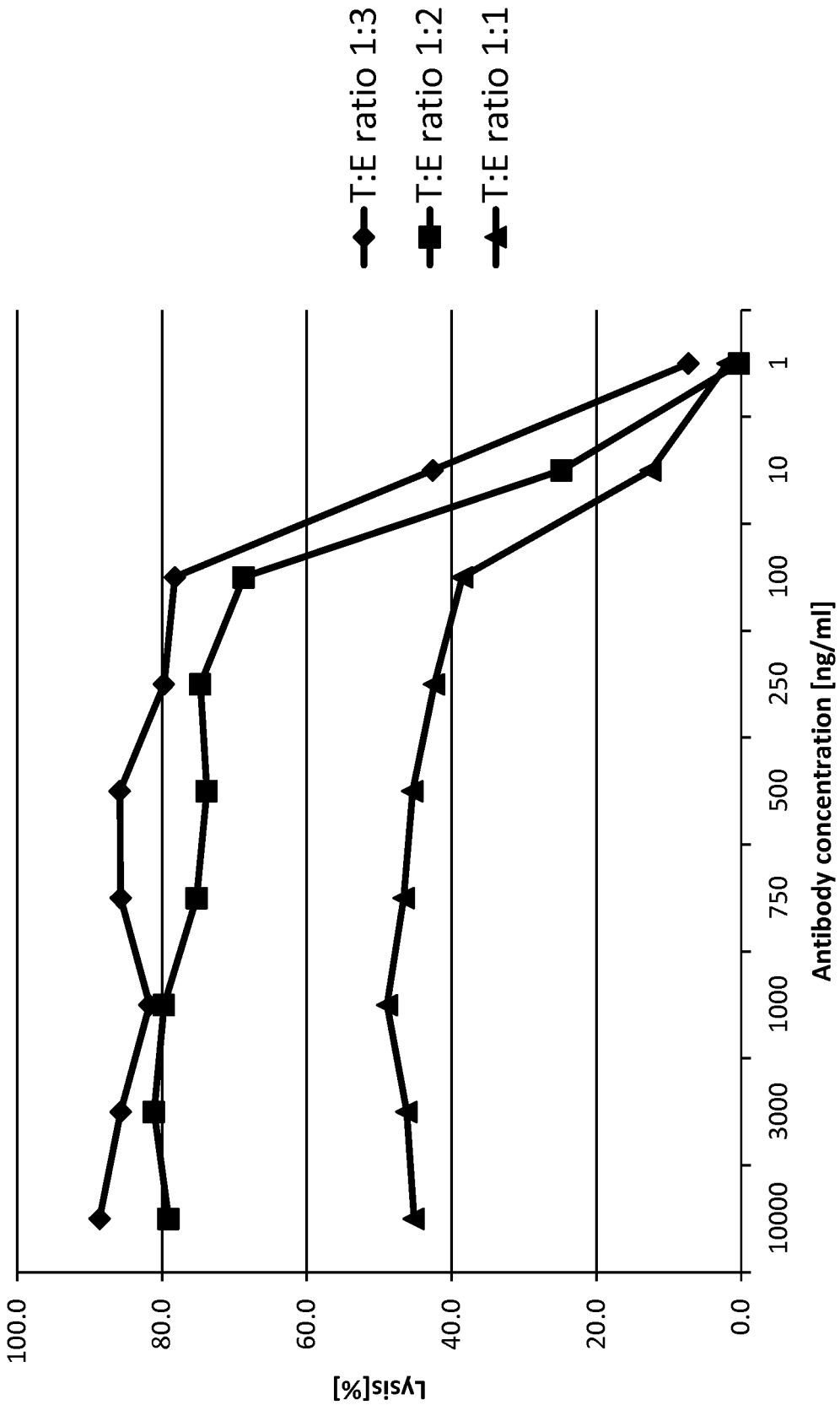

T:E ratio 1:3
T:E ratio 1:2
T:E ratio 1:1
Lysis[%]
100.0
80.0
60.0
40.0
20.0
0.0
Antibody concentration [ng/ml]
10000
3000
1000
750
500
250
100
10
1

Figure 13

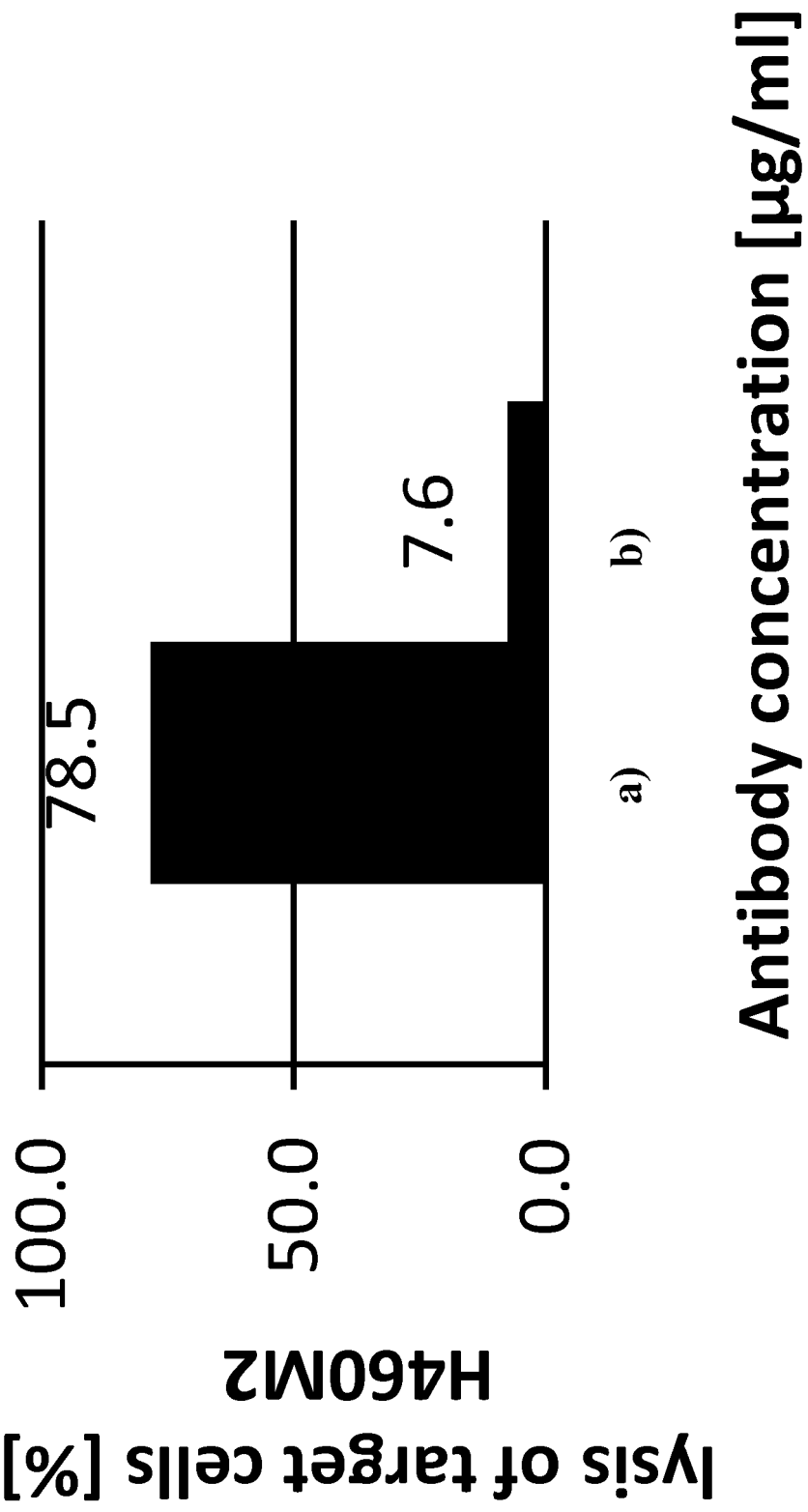

Lysis of target cells [%]
H460M2
100.0
50.0
0.0
78.5
7.6
a)
b)
Antibody concentration [µg/ml]

Figure 14

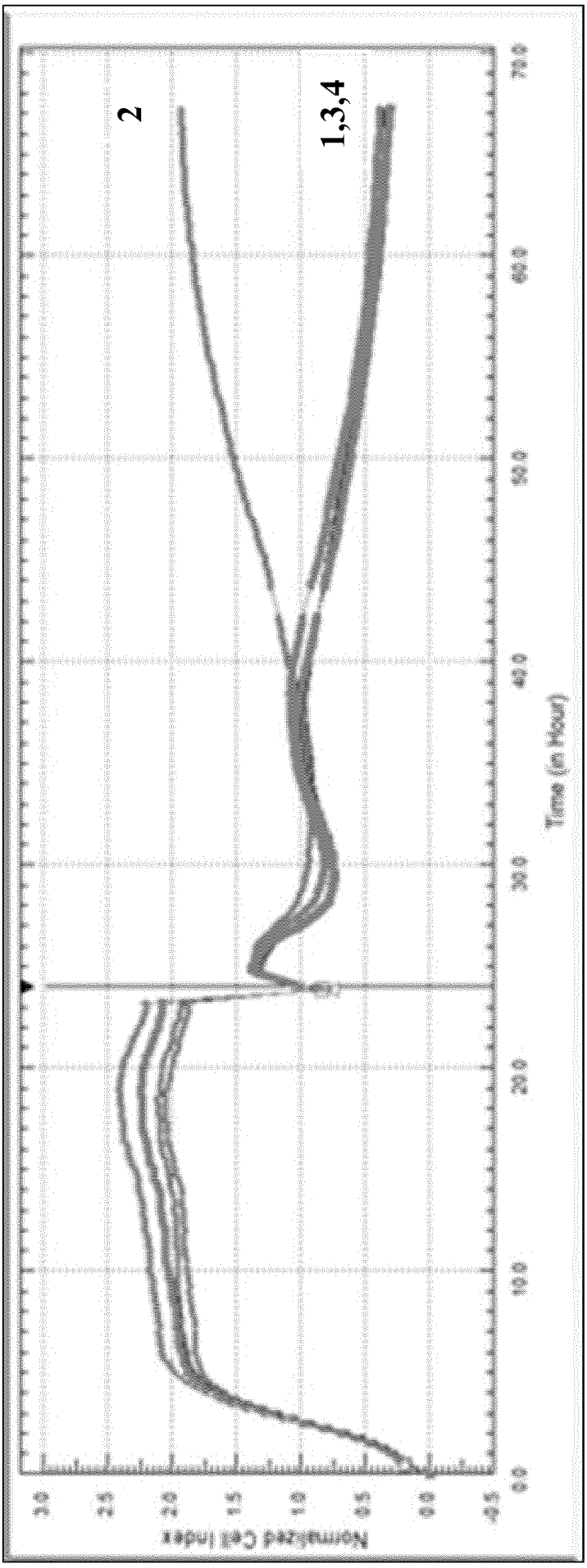


Figure 15A

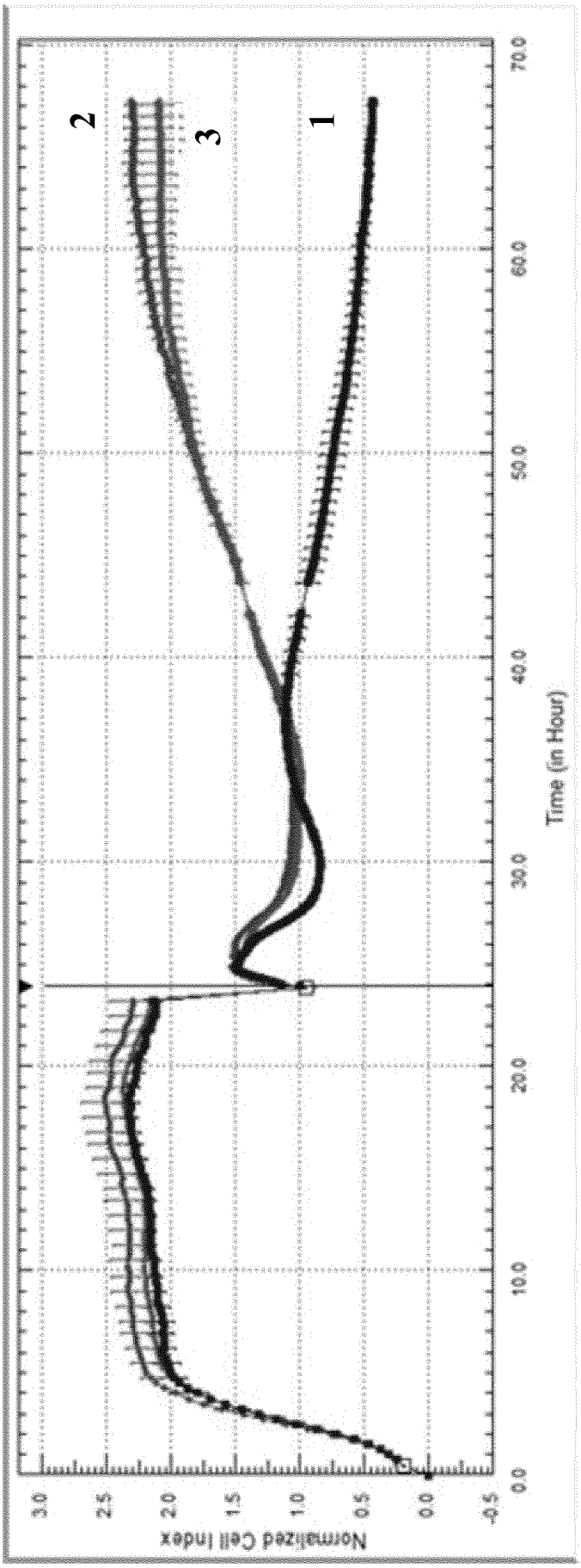

2
3
1
Normalized Cell Index
Time (in Hour)
3.0
2.5
2.0
1.5
1.0
0.5
0.0
-0.5
0.0
10.0
20.0
30.0
40.0
50.0
60.0
70.0

Figure 15B

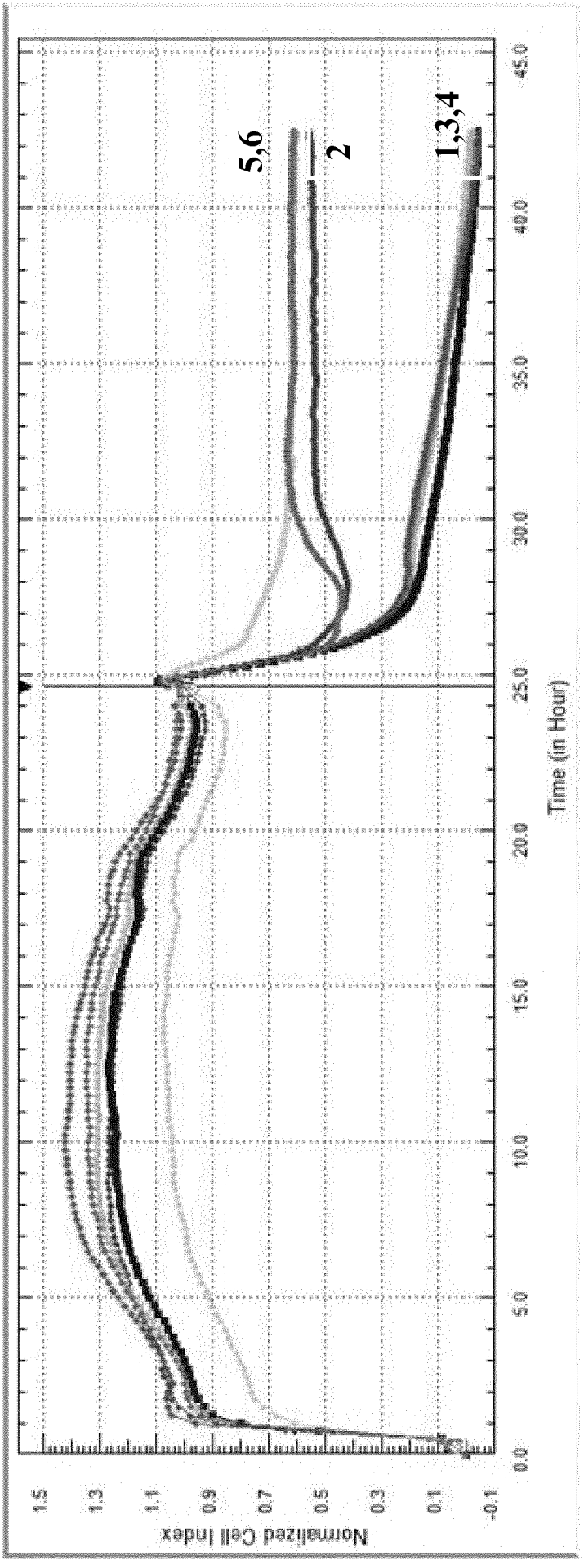

5,6
2
1,3,4
Normalized Cell Index
Time (in Hour)
1.5
1.3
1.1
0.9
0.7
0.5
0.3
0.1
-0.1
0.0
5.0
10.0
15.0
20.0
25.0
30.0
35.0
40.0
45.0

Figure 16

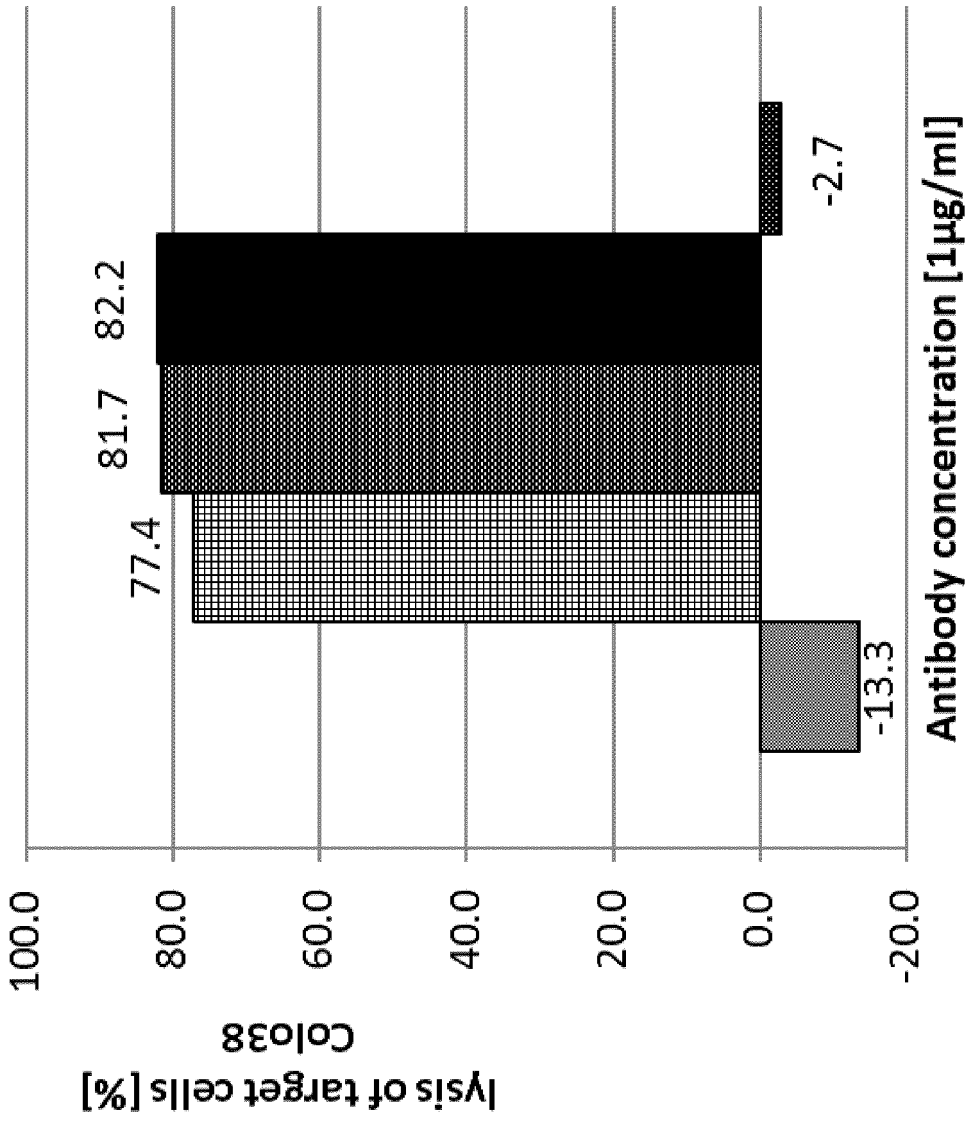

Lysis of target cells [%]
Colo38
100.0
80.0
60.0
40.0
20.0
0.0
-20.0
Antibody concentration [1µg/ml]
2
1
5
4
3
77.4
81.7
82.2
-13.3
-2.7

Figure 17

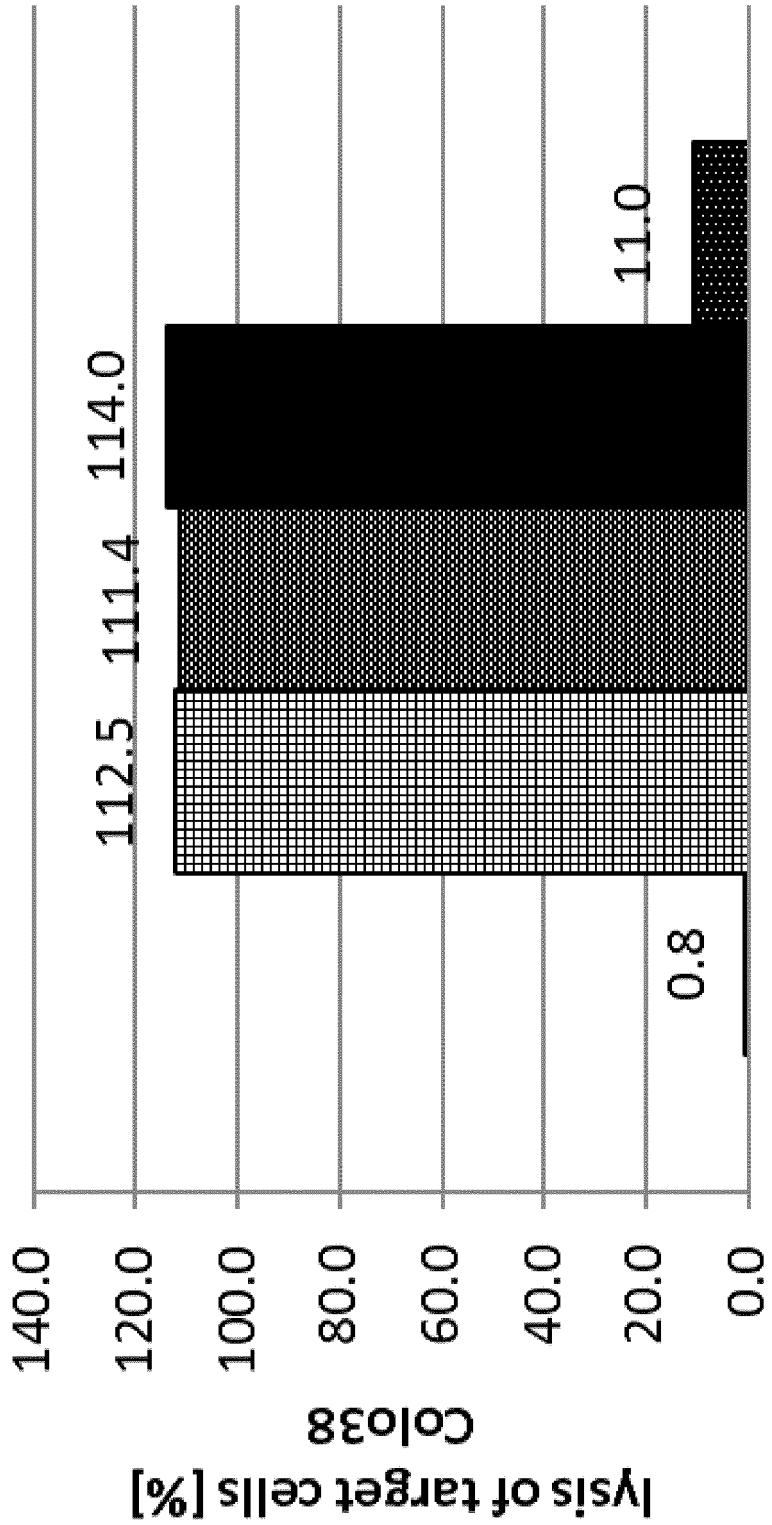

Lysis of target cells [%]
Colo38
140.0
120.0
100.0
80.0
60.0
40.0
20.0
0.0
2
1
5
4
3
112.5
111.4
114.0
0.8
11.0

Figure 18A

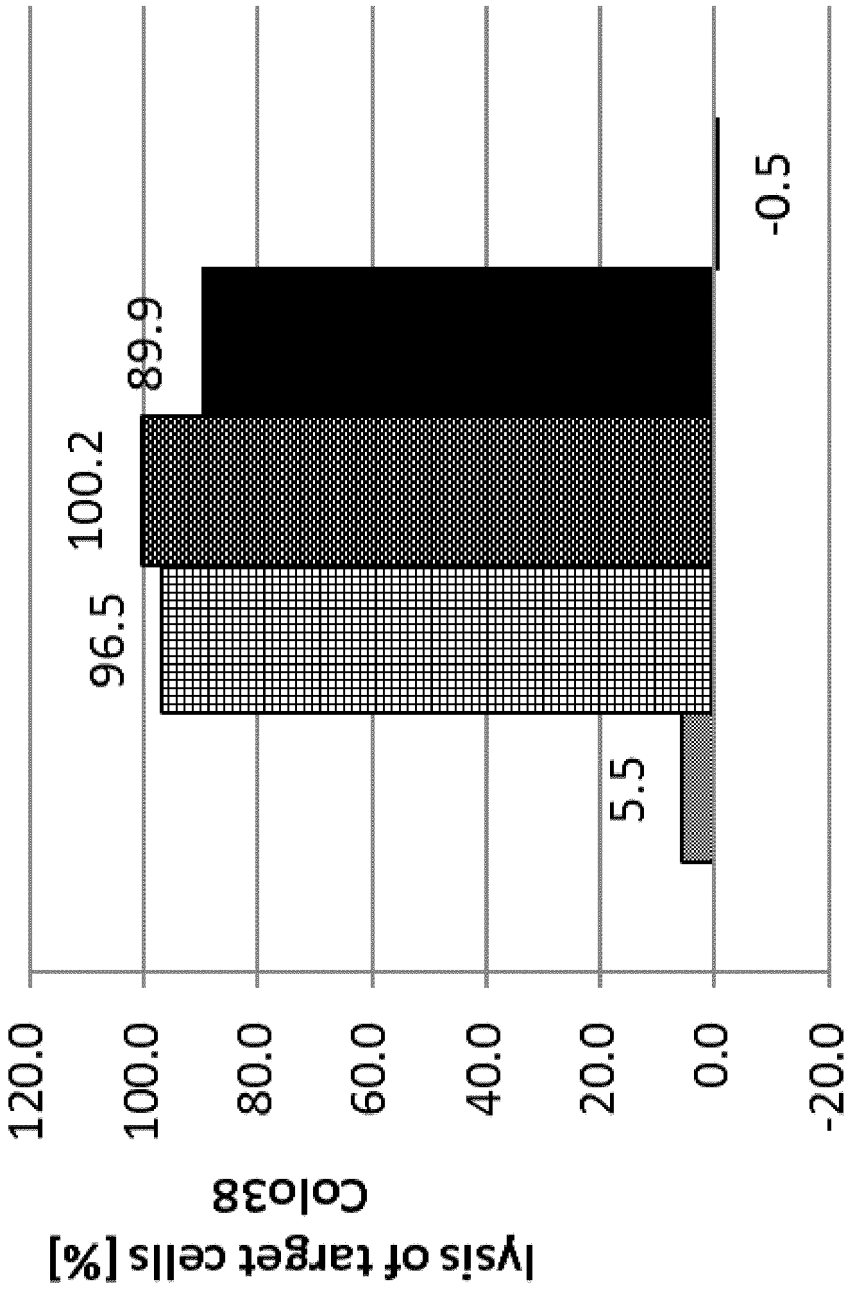

Lysis of target cells [%]
Colo38
120.0
100.0
80.0
60.0
40.0
20.0
0.0
-20.0
2
1
5
4
3
96.5
100.2
89.9
5.5
-0.5

Figure 18B

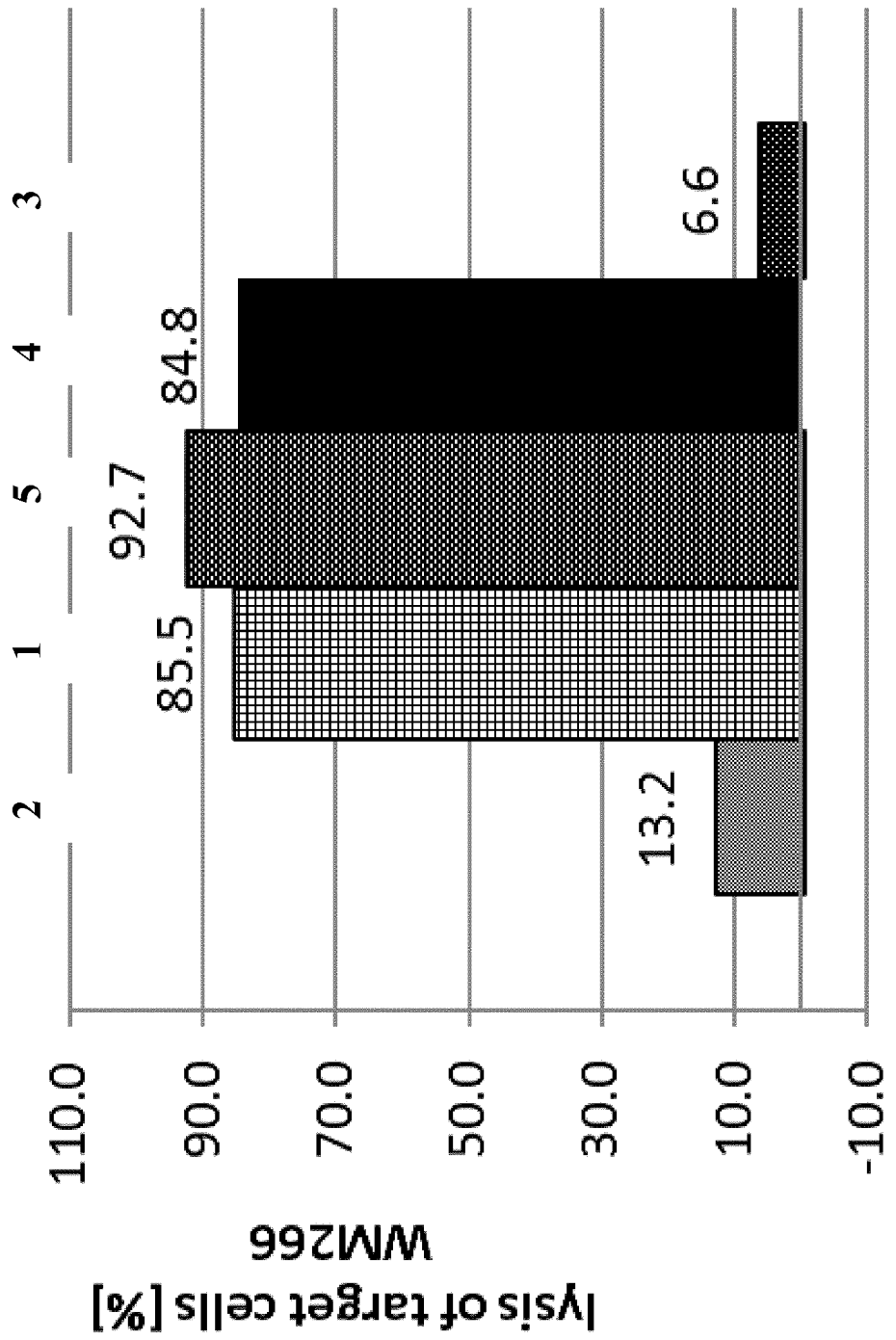

Lysis of target cells [%]
WM266
110.0
90.0
70.0
50.0
30.0
10.0
-10.0
2
1
5
4
3
85.5
92.7
84.8
13.2
6.6

Figure 19

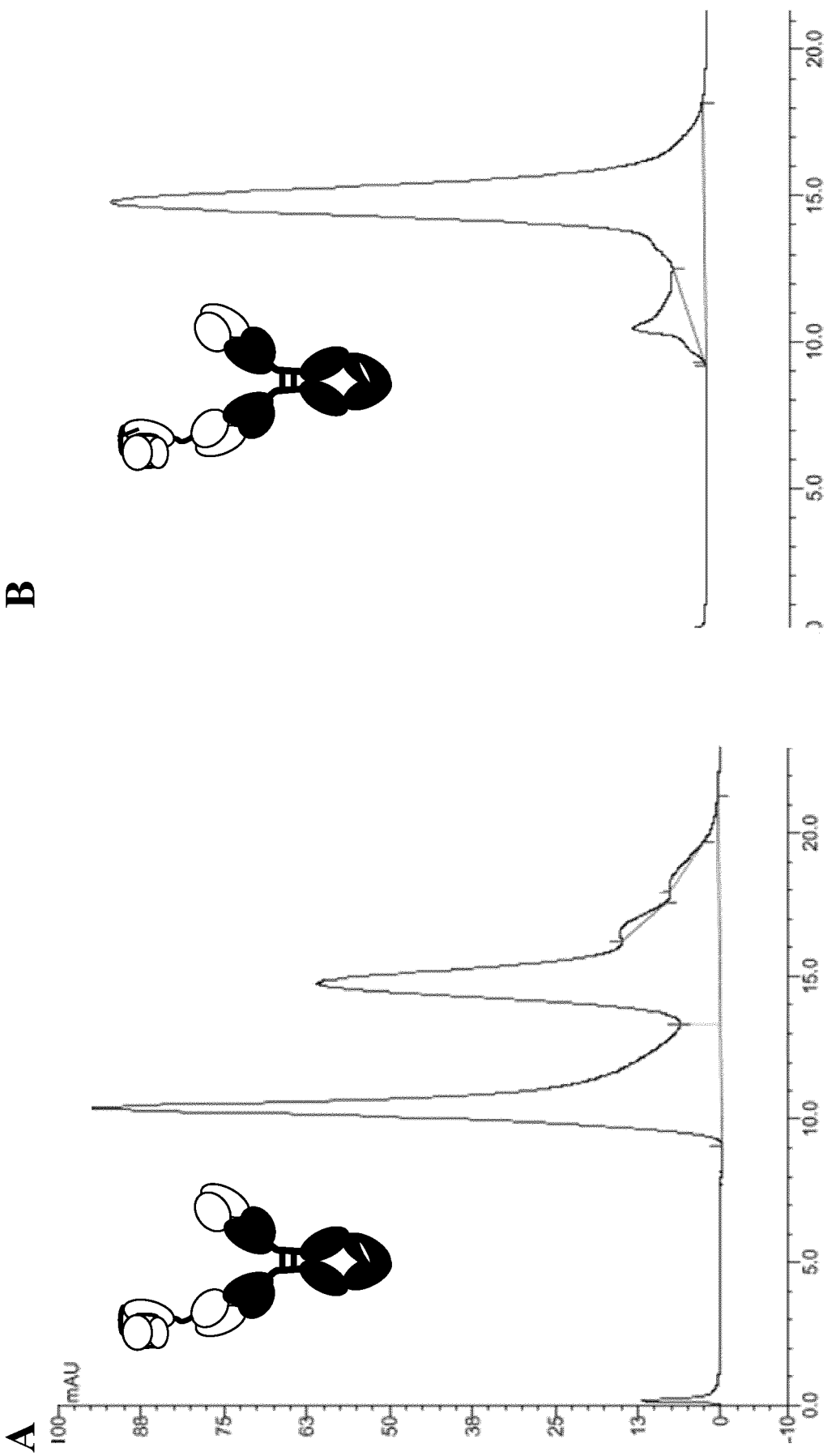


Figure 20

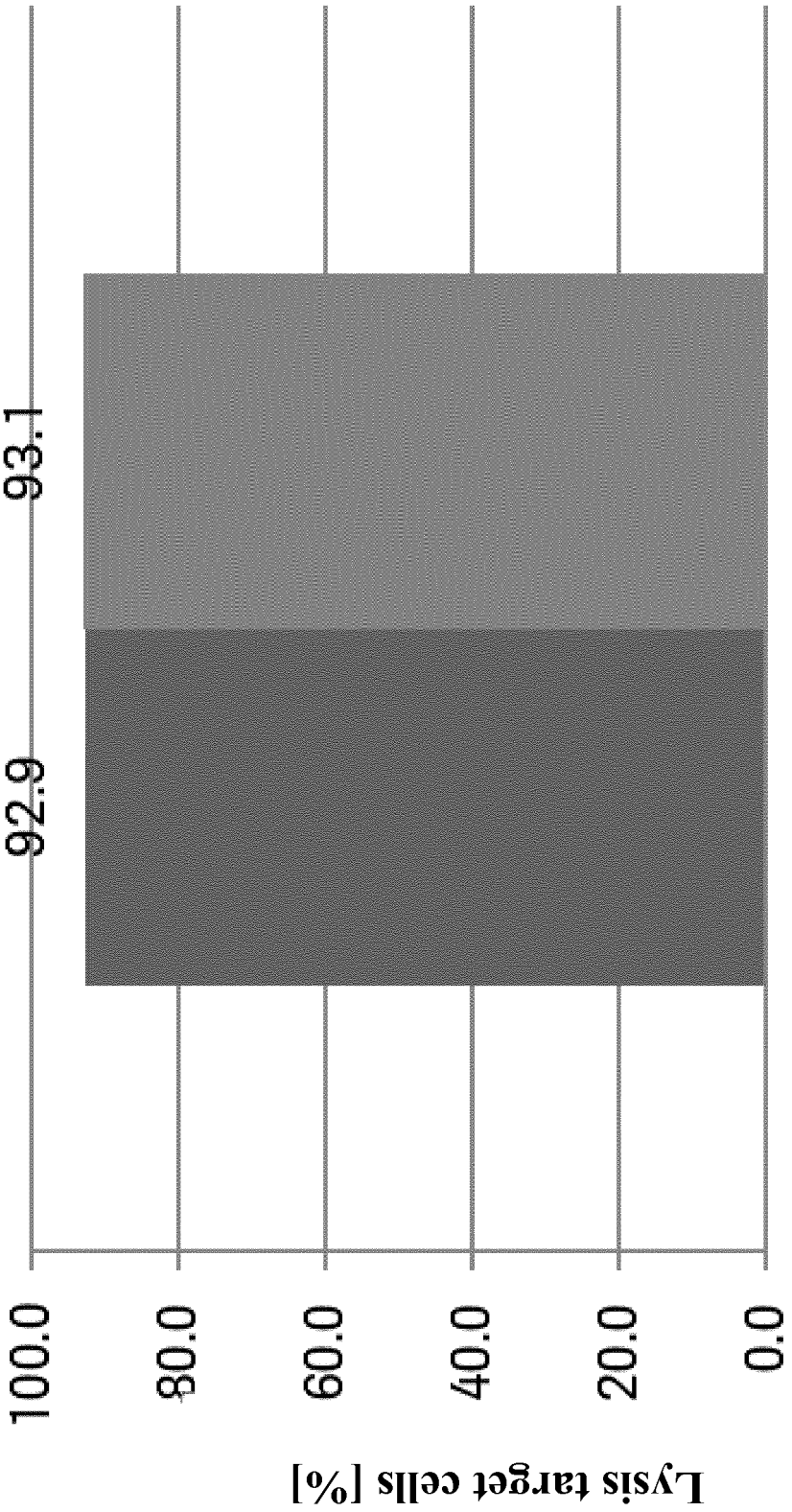
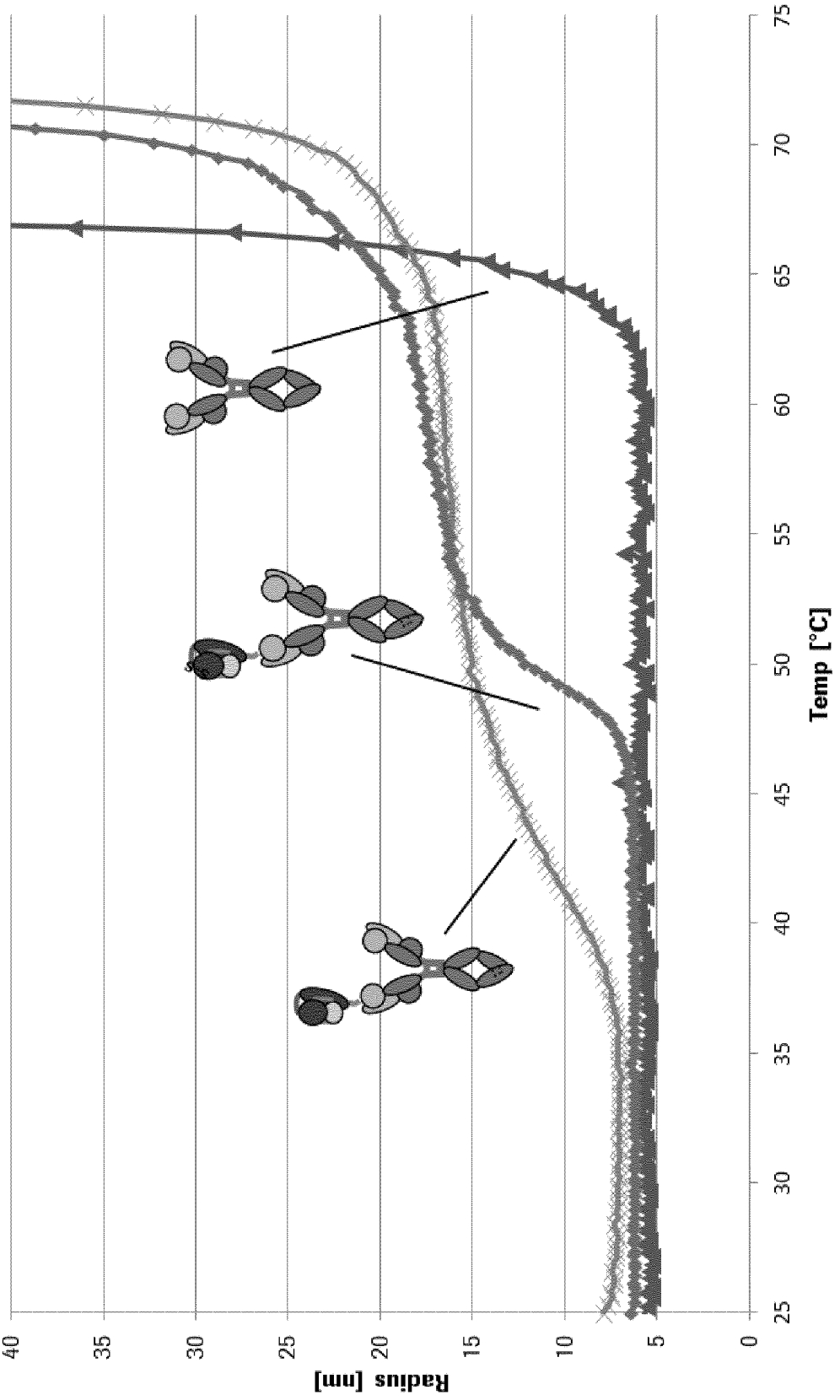


Figure 21


Radius [nm]
40
35
30
25
20
15
10
5
0
Temp [°C]
25
30
35
40
45
50
55
60
65
70
75