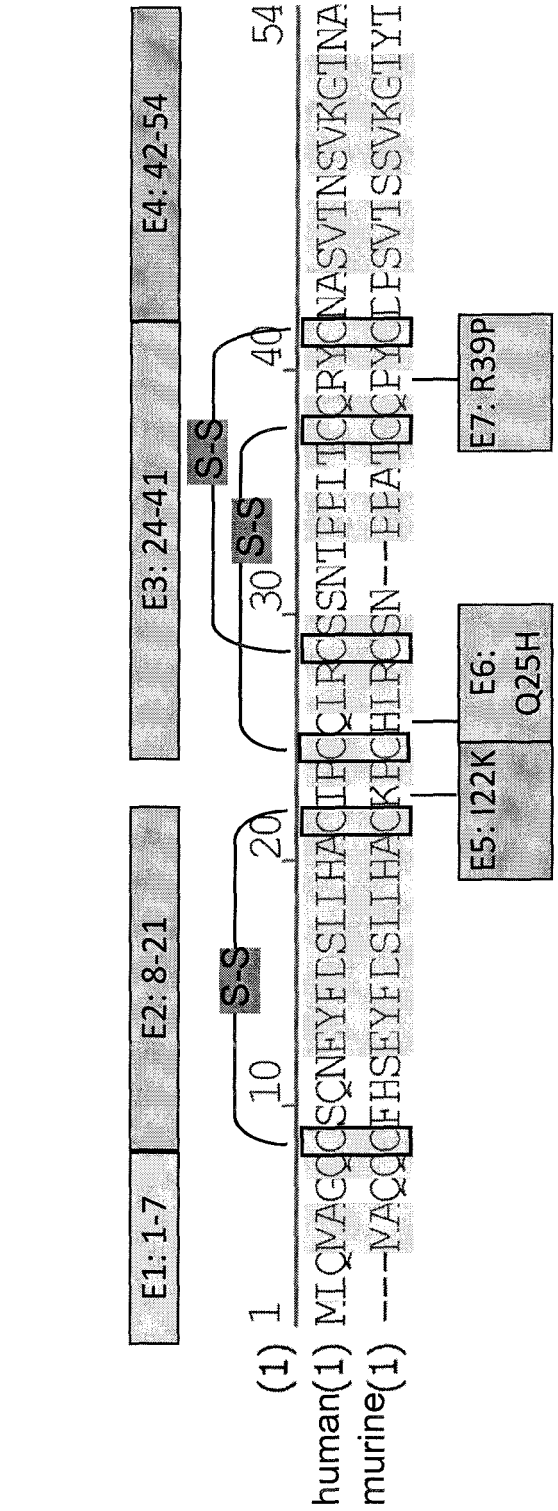
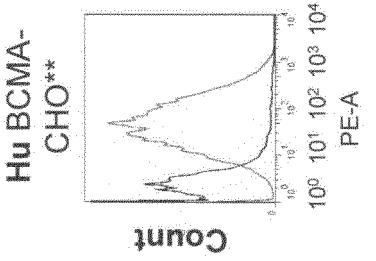
Figure 1



E1: N-terminal domain
E2: First disulfide bound defined domain
E3: Second (double) disulfide bound defined domain
E4: C-terminal extracellular domain
E5: Inter-E2/E3 point mutation
E6+E7: E3 point mutations

Figure 2a



* Extracellular BCMA fused to transmembrane plus cytoplasmatic human EpCAM

** unmodified transmembrane BCMA

Figure 2b

Figure A3

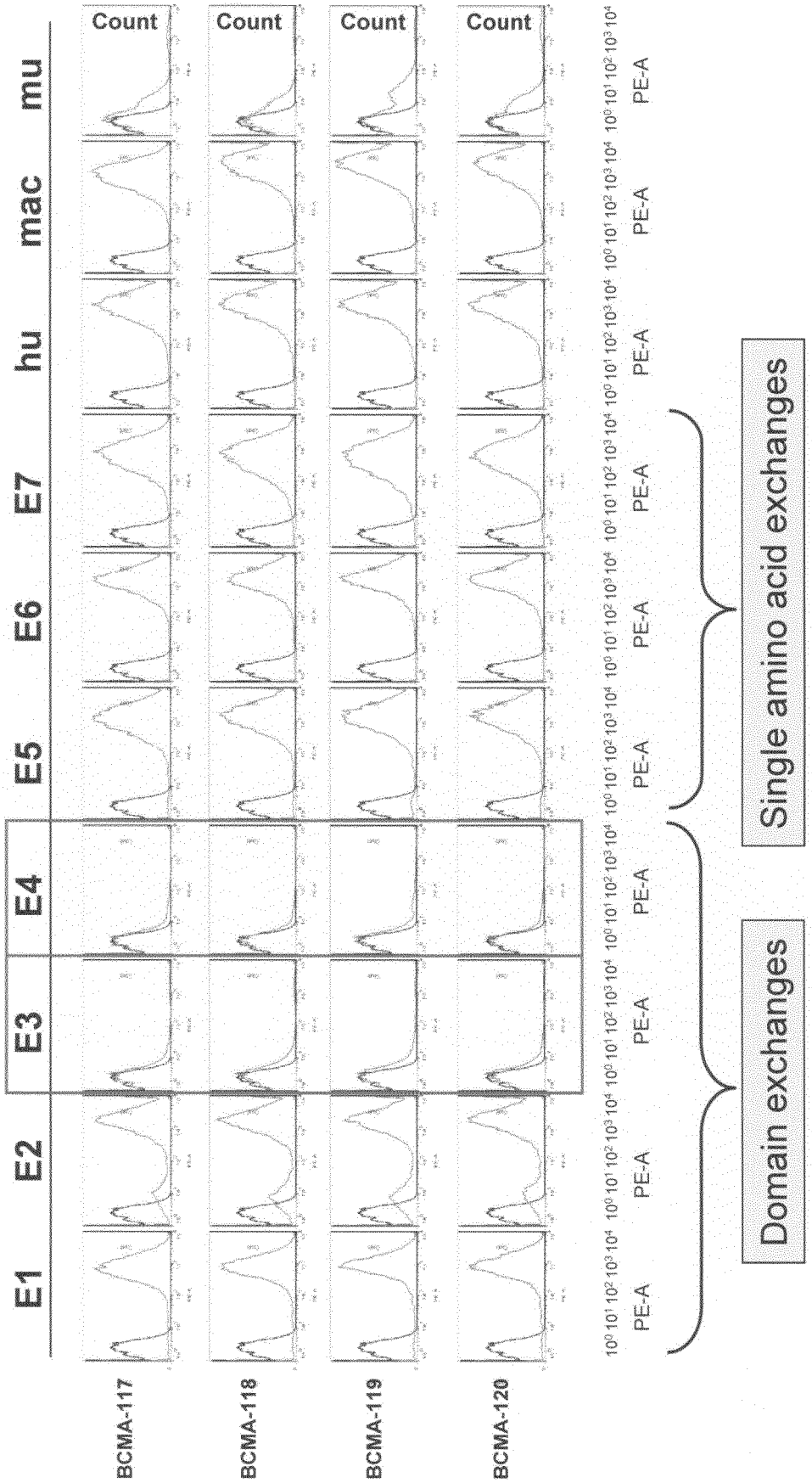

E1
E2
E3
E4
E5
E6
E7
hu
mac
mu
Count
BCMA-117
BCMA-118
BCMA-119
BCMA-120
PE-A
Domain exchanges
Single amino acid exchanges

Figure A3 (continued)

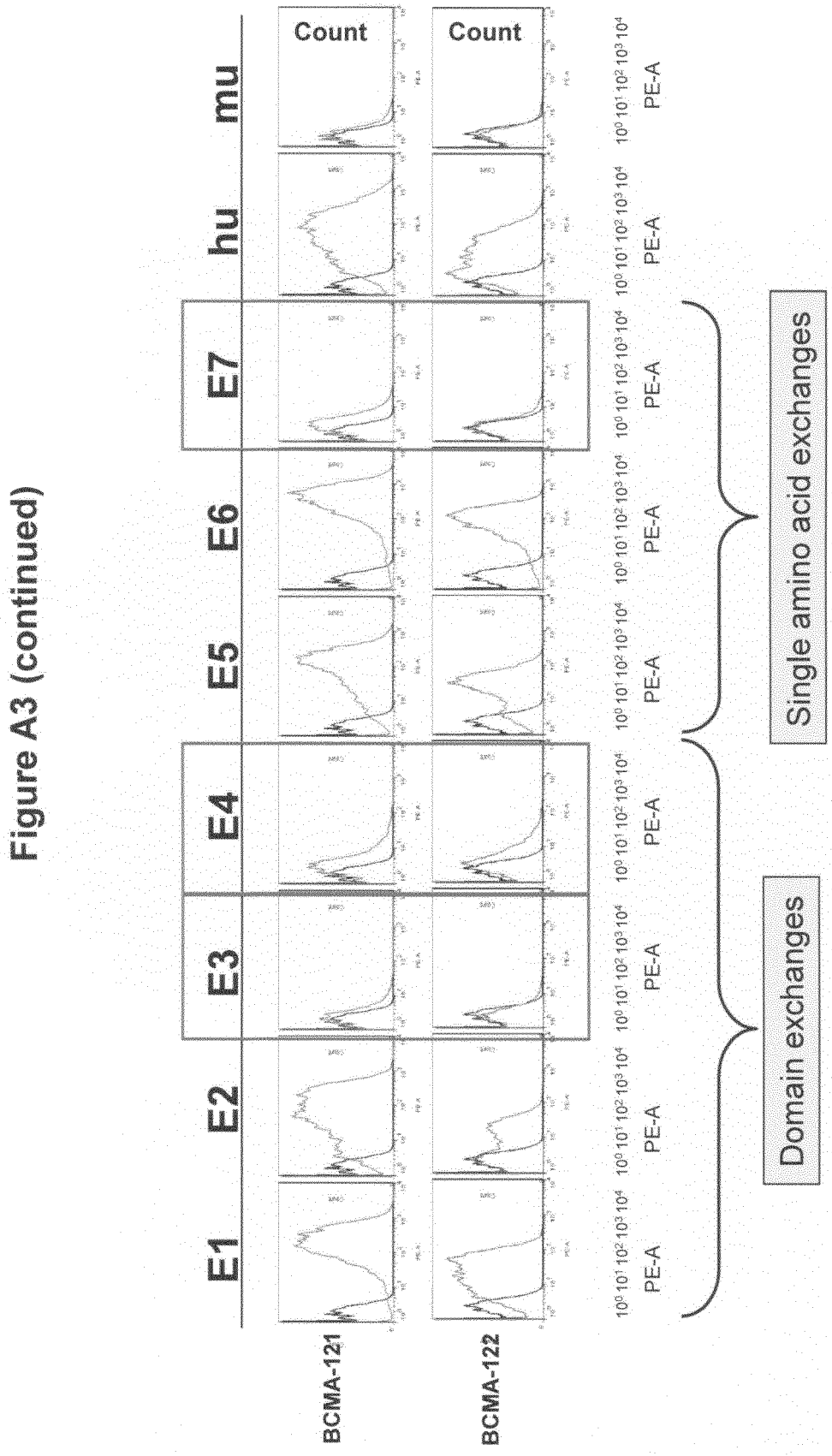


Figure B3

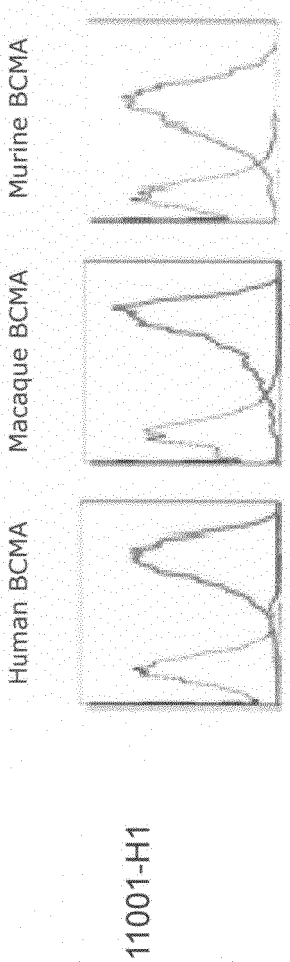


Figure C3

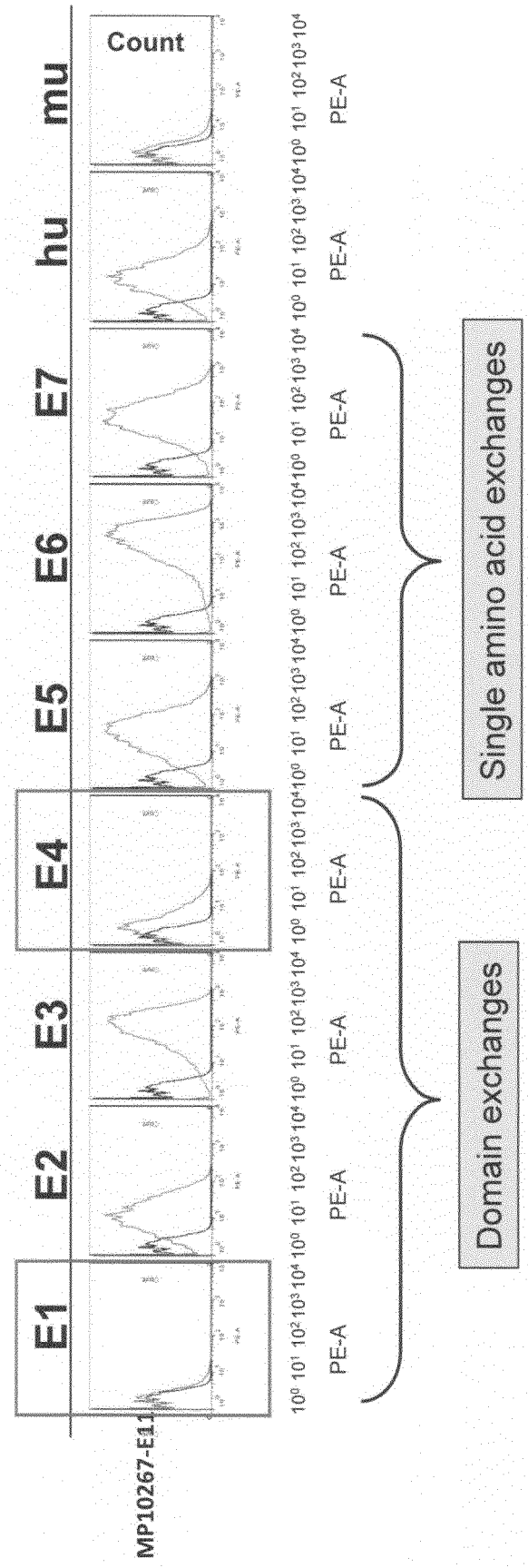

E1
E2
E3
E4
E5
E6
E7
hu
mu
Count
MP10267-E11
PE-A
Domain exchanges
Single amino acid exchanges

Figure D3

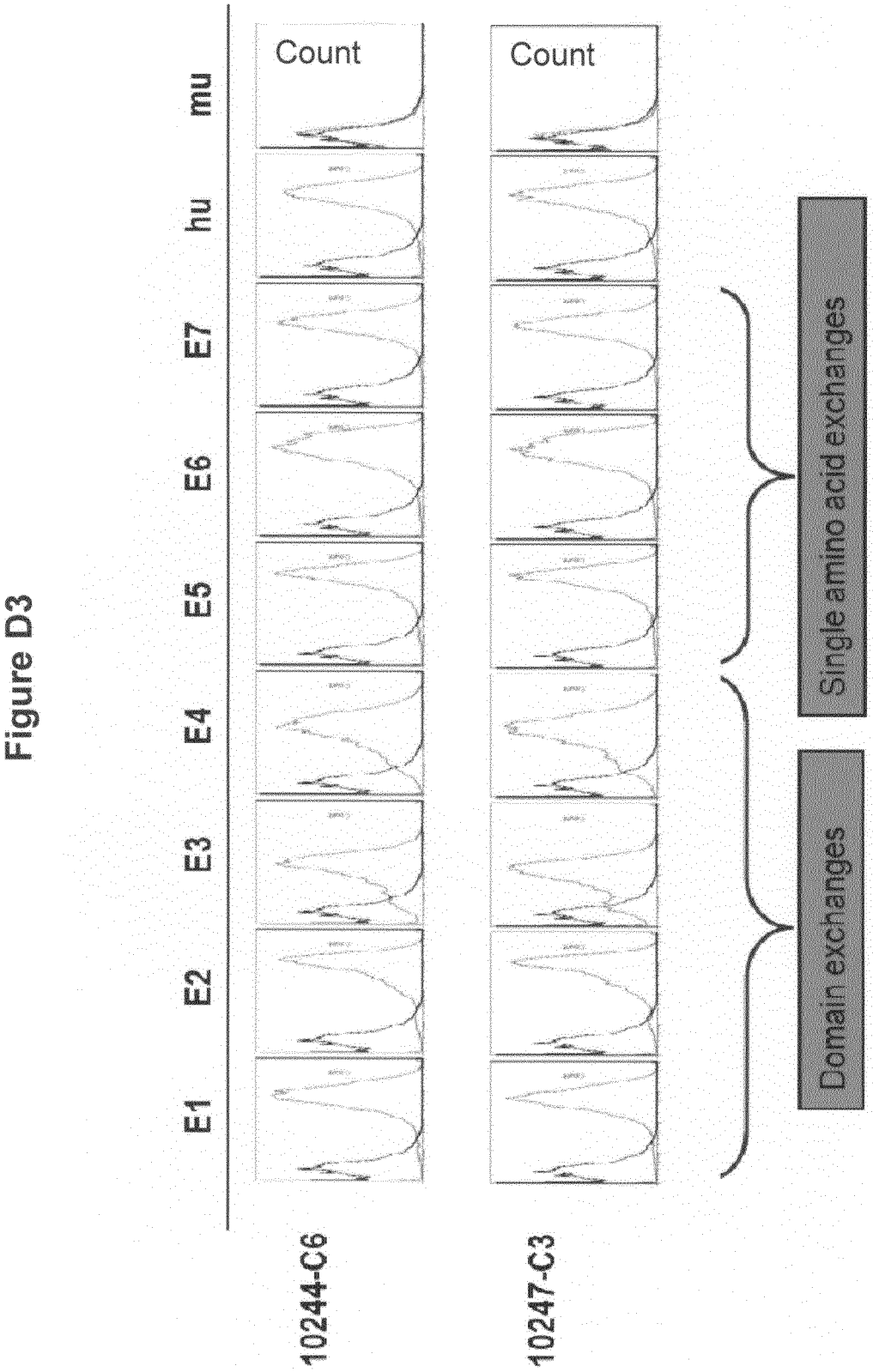
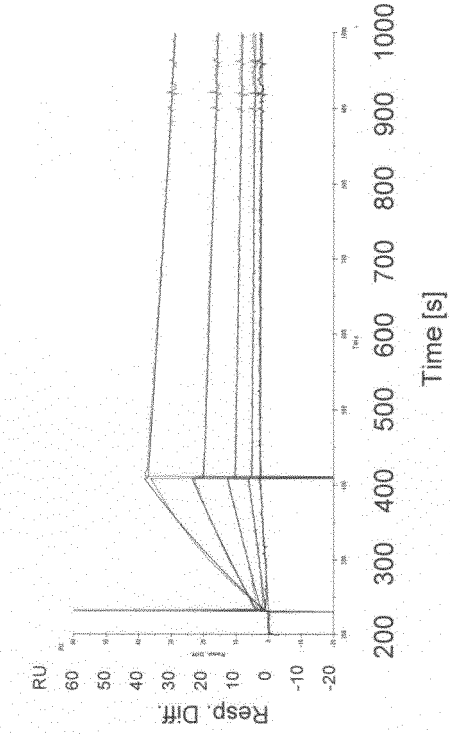
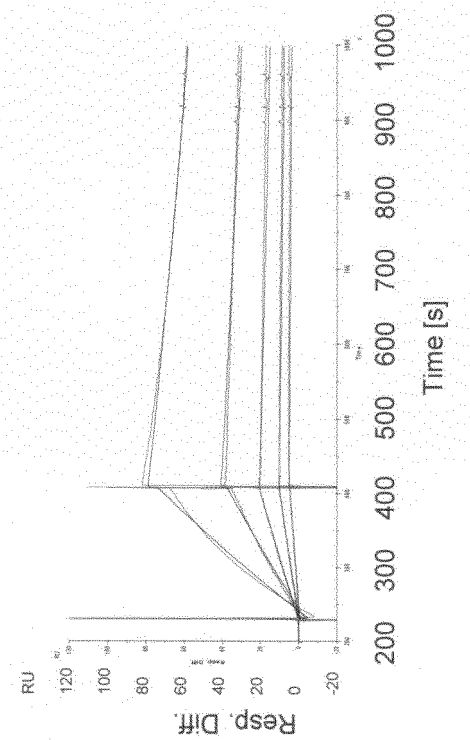

E1
E2
E3
E4
E5
E6
E7
hu
mu
Count
Count
10244-C6
10247-C3
Domain exchanges
Single amino acid exchanges

Figure A4



KD = 11.7 nM

k off = 4.2 x 10^{-4} x s^{-1}



KD = 34.2 nM

k off = 5.2 x 10^{-4} x s^{-1}

BCMA-107
x CD3

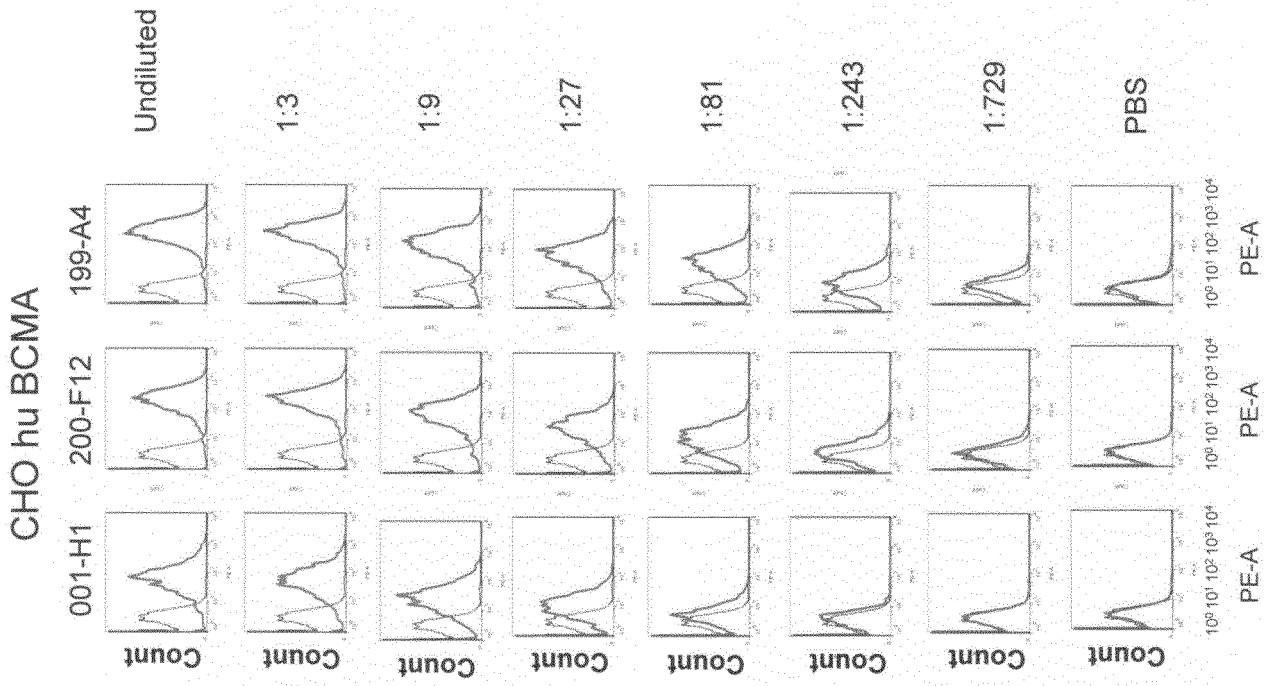

CHO hu BCMA
001-H1
200-F12
199-A4
Undiluted
1:3
1:9
1:27
1:81
1:243
1:729
PBS
Count
PE-A

Figure B4

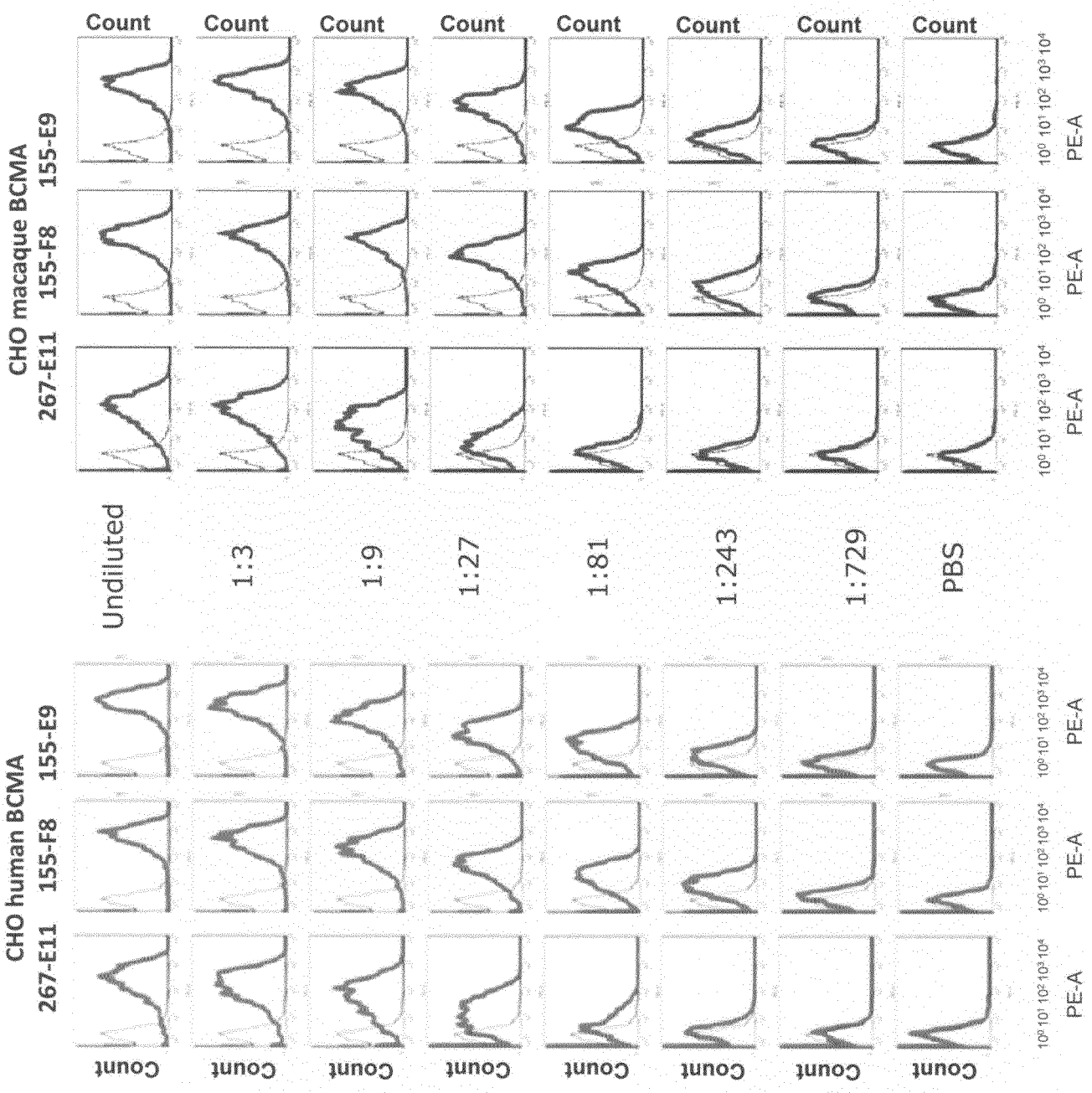

CHO human BCMA
267-E11
155-F8
155-E9
CHO macaque BCMA
267-E11
155-F8
155-E9
Undiluted
1:3
1:9
1:27
1:81
1:243
1:729
PBS
Count
PE-A

Figure C4

Figure D4

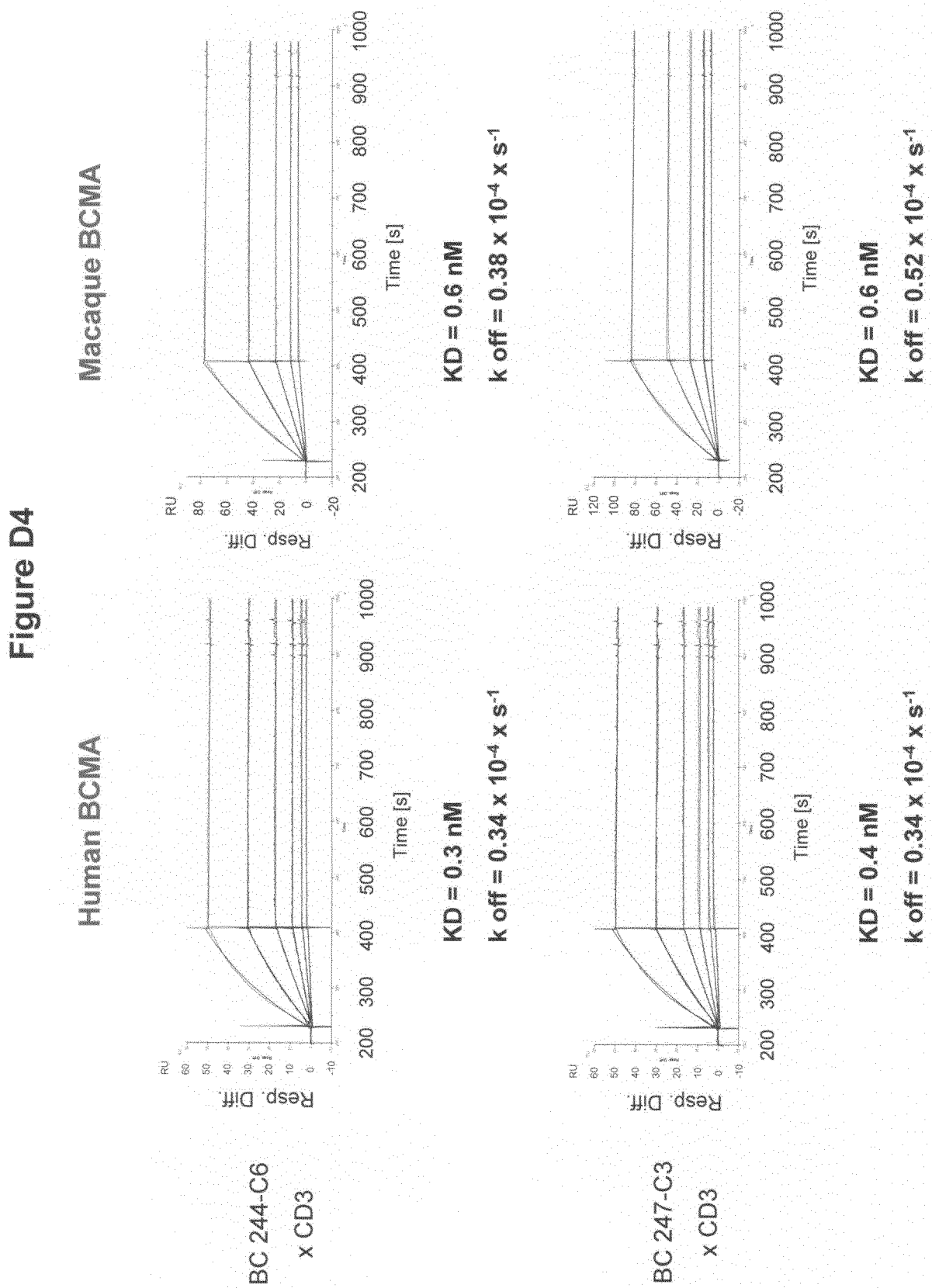

Human BCMA
Macaque BCMA
BC 244-C6
x CD3
BC 247-C3
x CD3
Resp. Diff.
RU
Time [s]
KD = 0.3 nM
k off = 0.34 x 10-4 x s-1
KD = 0.6 nM
k off = 0.38 x 10-4 x s-1
KD = 0.4 nM
k off = 0.34 x 10-4 x s-1
KD = 0.6 nM
k off = 0.52 x 10-4 x s-1

Figure A5

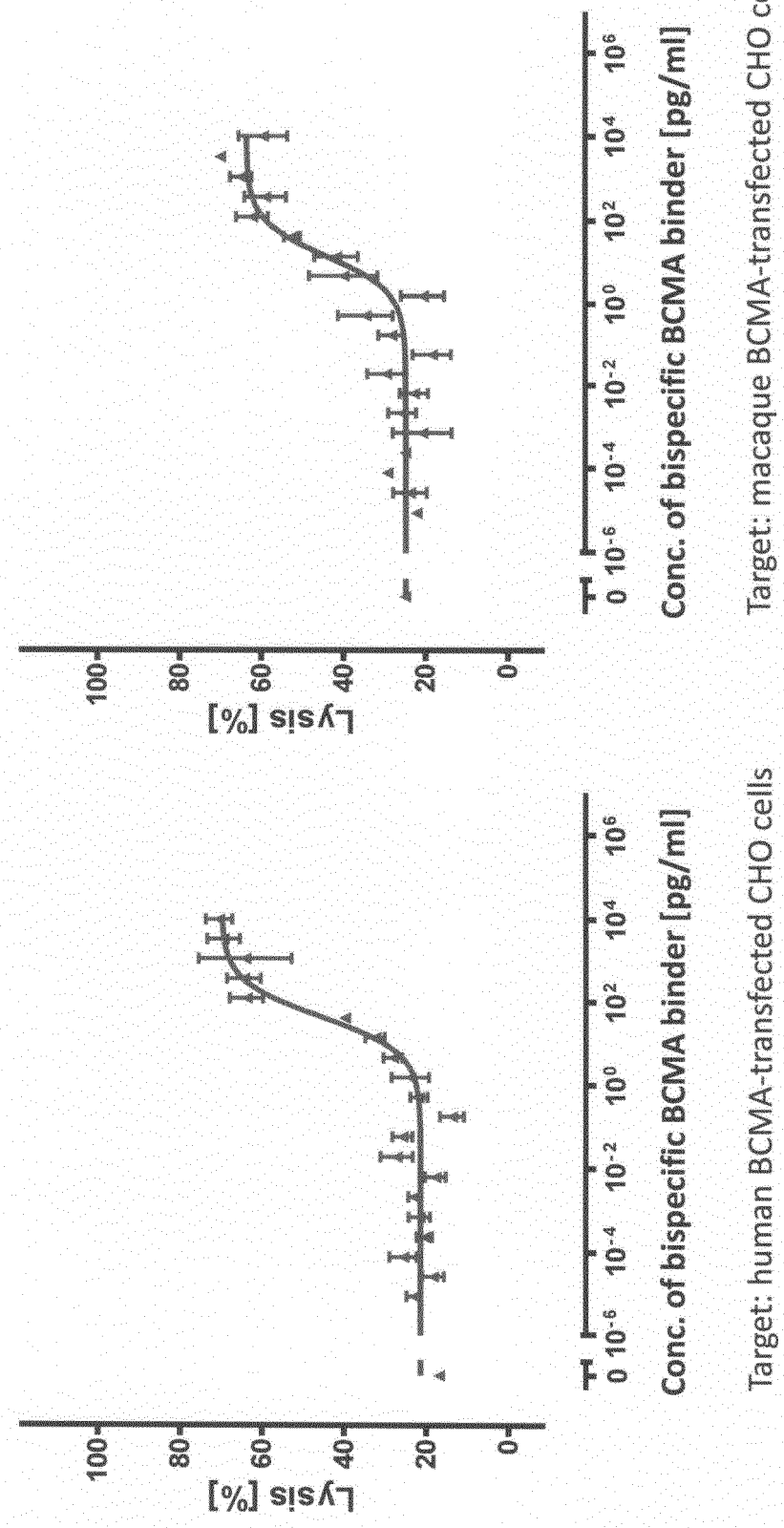

Lysis [%]
100
80
60
40
20
0
0 10-6 10-4 10-2 100 102 104 106
Conc. of bispecific BCMA binder [pg/ml]
Target: human BCMA-transfected CHO cells
EC50 = 96.5 pg/ml
Target: macaque BCMA-transfected CHO cells
EC50 = 16.0 pg/ml

Figure D5

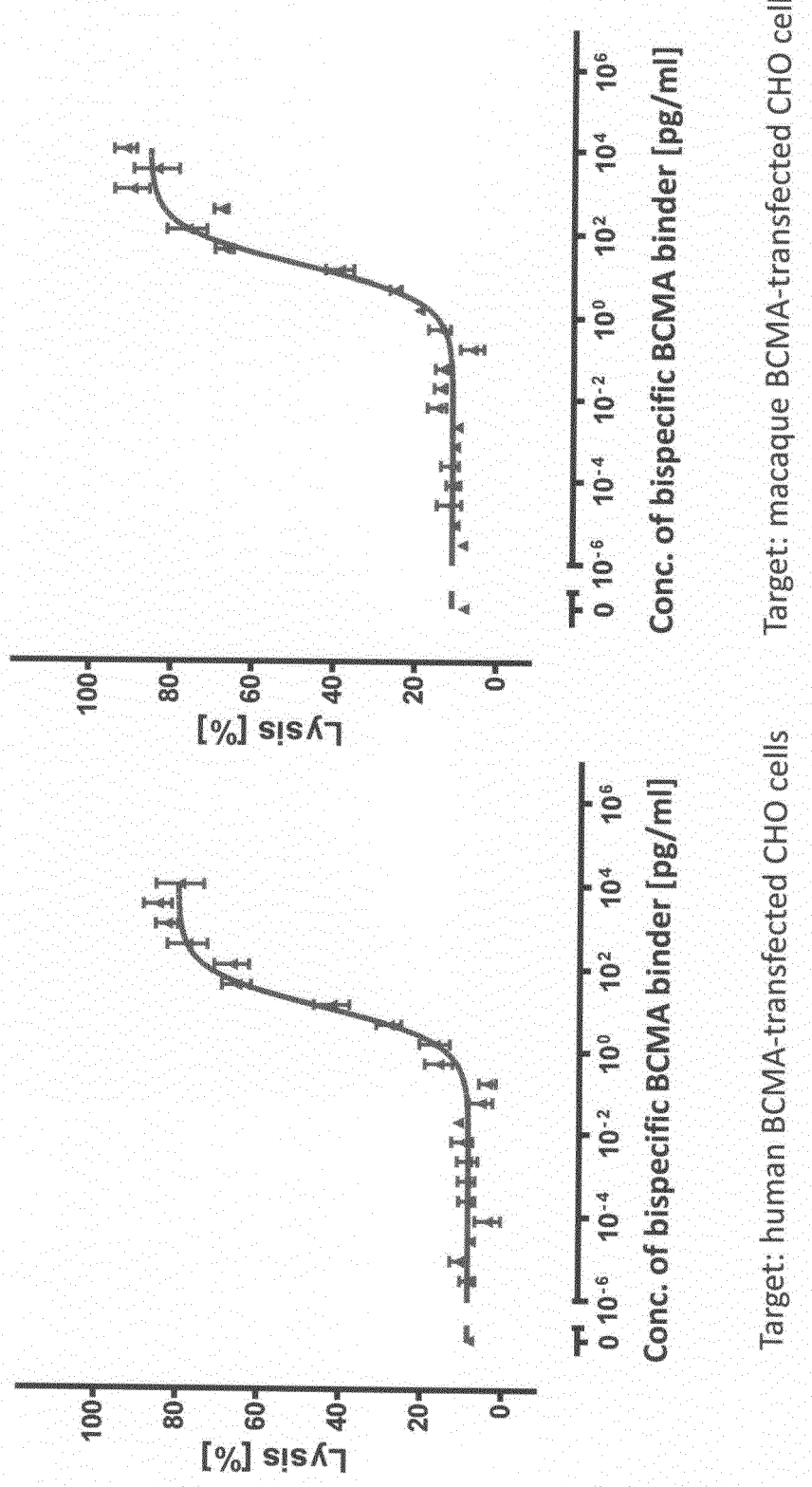

Lysis [%]
100
80
60
40
20
0
0 10-6 10-4 10-2 100 102 104 106
Conc. of bispecific BCMA binder [pg/ml]
Target: human BCMA-transfected CHO cells
EC50 = 12 pg/ml
Target: macaque BCMA-transfected CHO cells
EC50 = 18 pg/ml

Figure A6

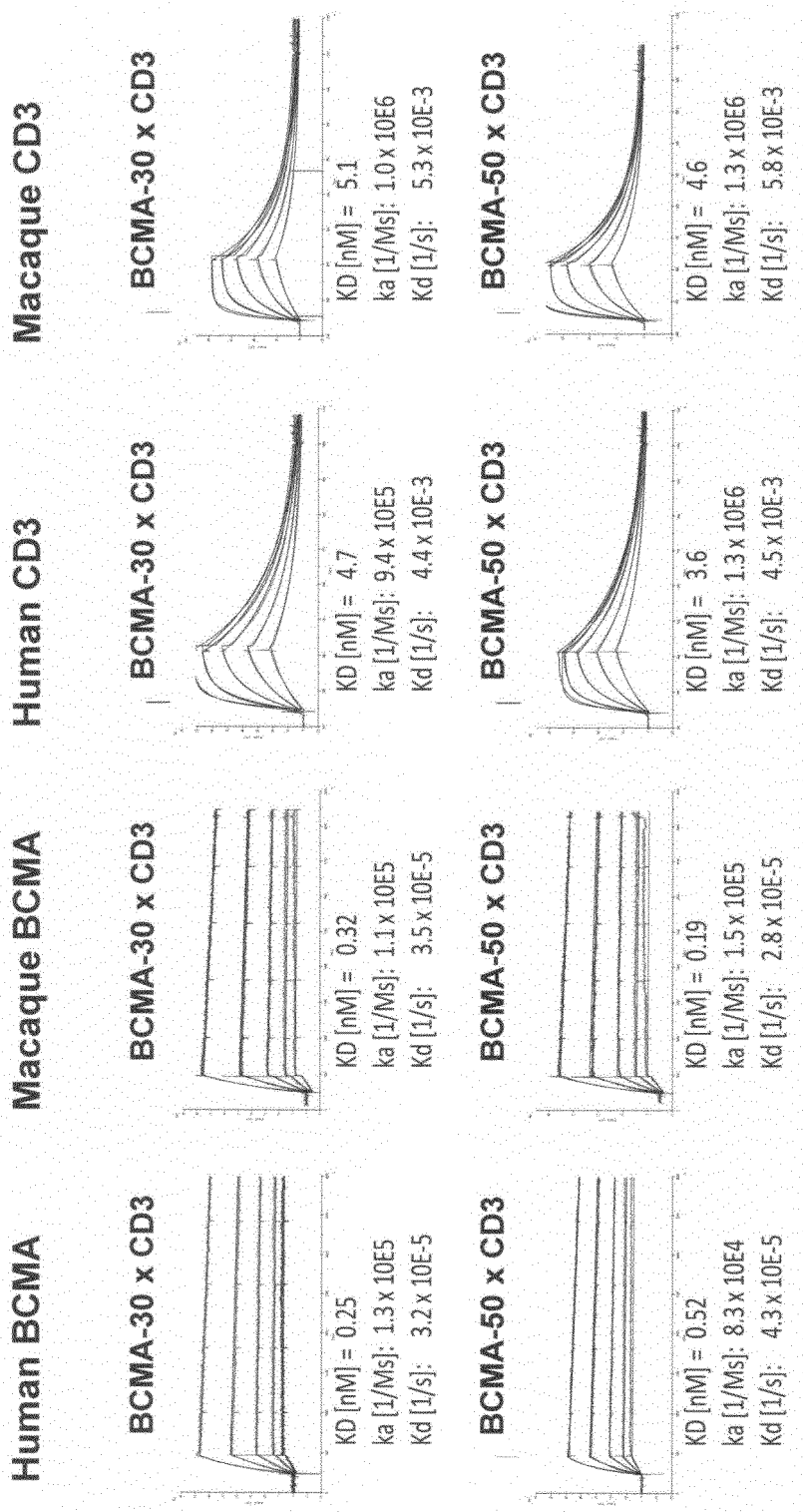

Human BCMA
Macaque BCMA
Human CD3
Macaque CD3
BCMA-30 x CD3
KD [nM] = 0.25
ka [1/Ms]: 1.3 x 10E5
Kd [1/s]: 3.2 x 10E-5
BCMA-30 x CD3
KD [nM] = 0.32
ka [1/Ms]: 1.1 x 10E5
Kd [1/s]: 3.5 x 10E-5
BCMA-30 x CD3
KD [nM] = 4.7
ka [1/Ms]: 9.4 x 10E5
Kd [1/s]: 4.4 x 10E-3
BCMA-30 x CD3
KD [nM] = 5.1
ka [1/Ms]: 1.0 x 10E6
Kd [1/s]: 5.3 x 10E-3
BCMA-50 x CD3
KD [nM] = 0.52
ka [1/Ms]: 8.3 x 10E4
Kd [1/s]: 4.3 x 10E-5
BCMA-50 x CD3
KD [nM] = 0.19
ka [1/Ms]: 1.5 x 10E5
Kd [1/s]: 2.8 x 10E-5
BCMA-50 x CD3
KD [nM] = 3.6
ka [1/Ms]: 1.3 x 10E6
Kd [1/s]: 4.5 x 10E-3
BCMA-50 x CD3
KD [nM] = 4.6
ka [1/Ms]: 1.3 x 10E6
Kd [1/s]: 5.8 x 10E-3

Figure A7

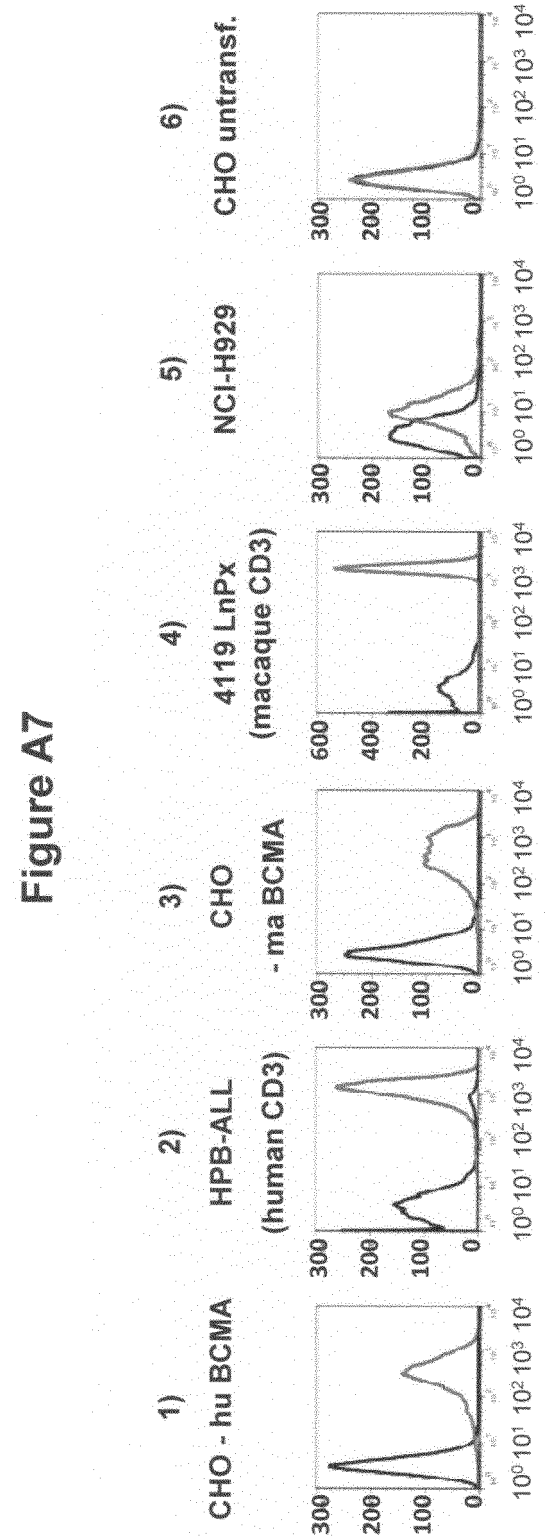

1)
CHO - hu BCMA
2)
HPB-ALL
(human CD3)
3)
CHO
- ma BCMA
4)
4119 LnPx
(macaque CD3)
5)
NCI-H929
6)
CHO untransf.
BCMA-50 x CD3

Figure A8

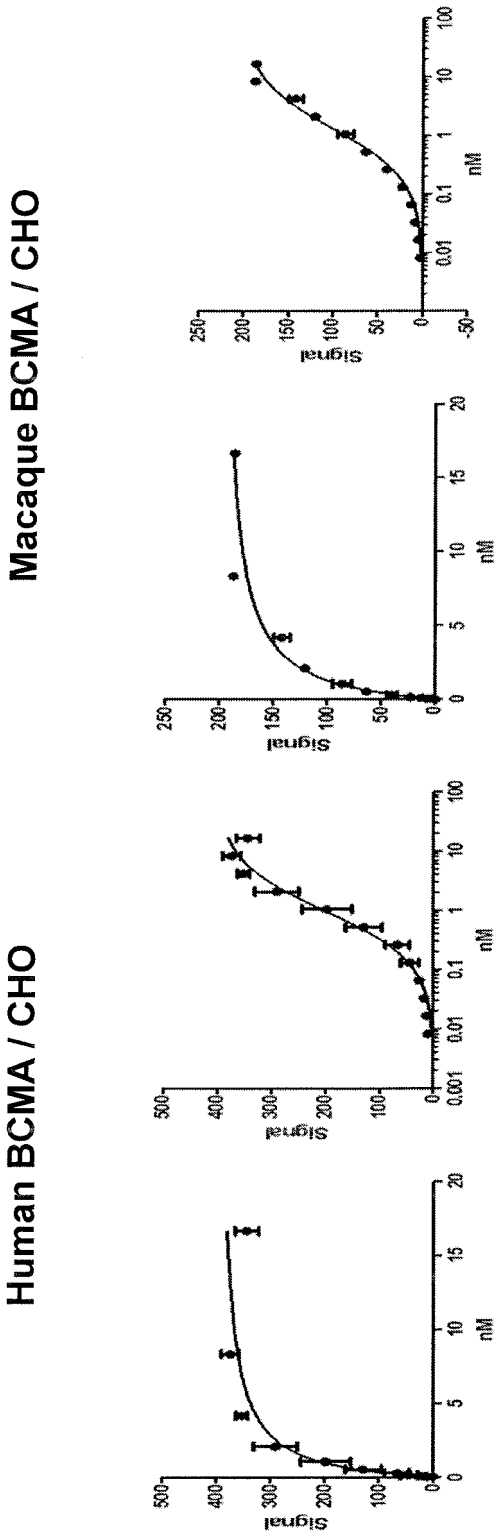


Figure A9

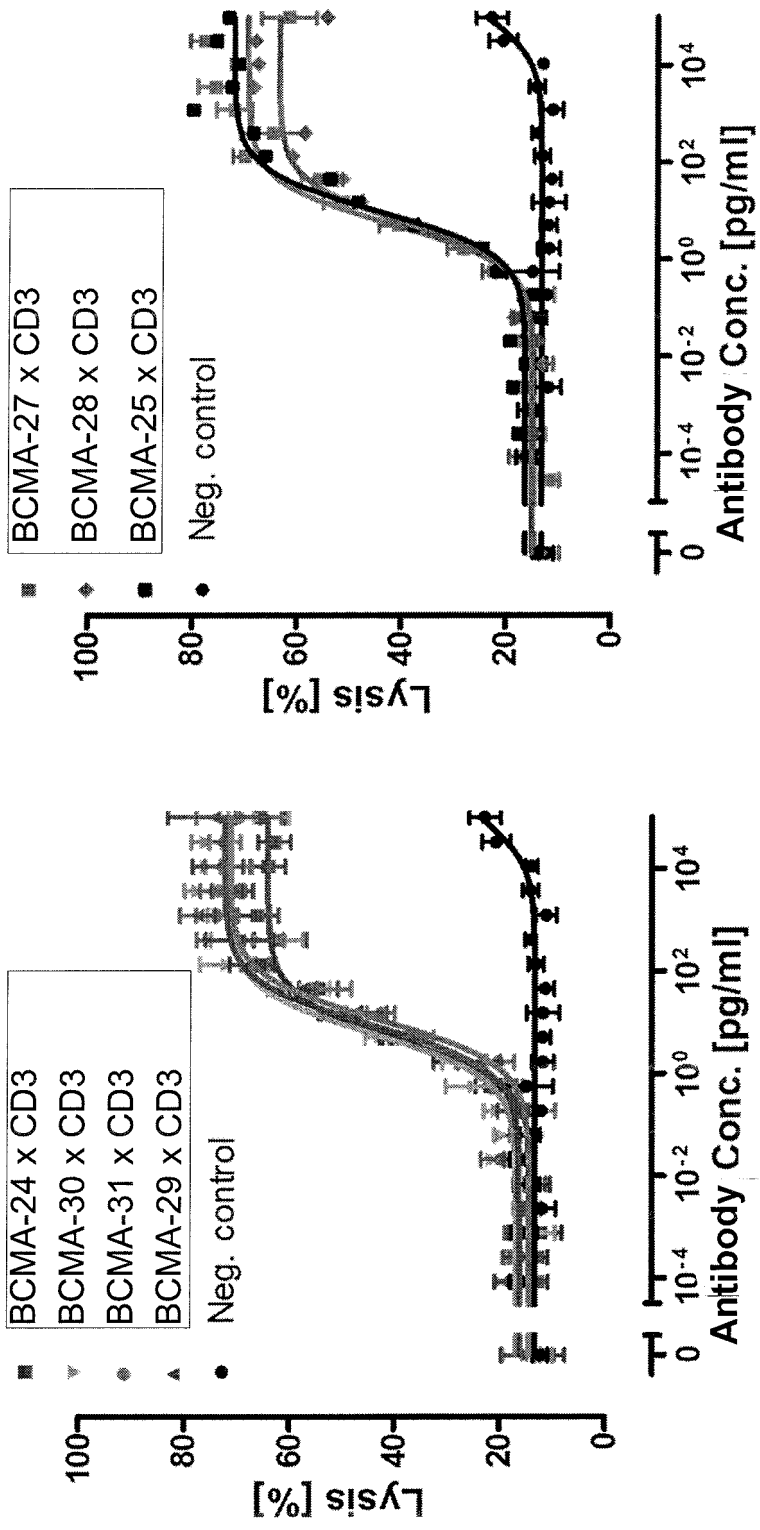

BCMA-24 x CD3
BCMA-30 x CD3
BCMA-31 x CD3
BCMA-29 x CD3
Neg. control
Lysis [%]
100
80
60
40
20
0
0
10-4
10-2
100
102
104
Antibody Conc. [pg/ml]
BCMA-27 x CD3
BCMA-28 x CD3
BCMA-25 x CD3
Neg. control
Lysis [%]
Antibody Conc. [pg/ml]

Figure A9 (continued)

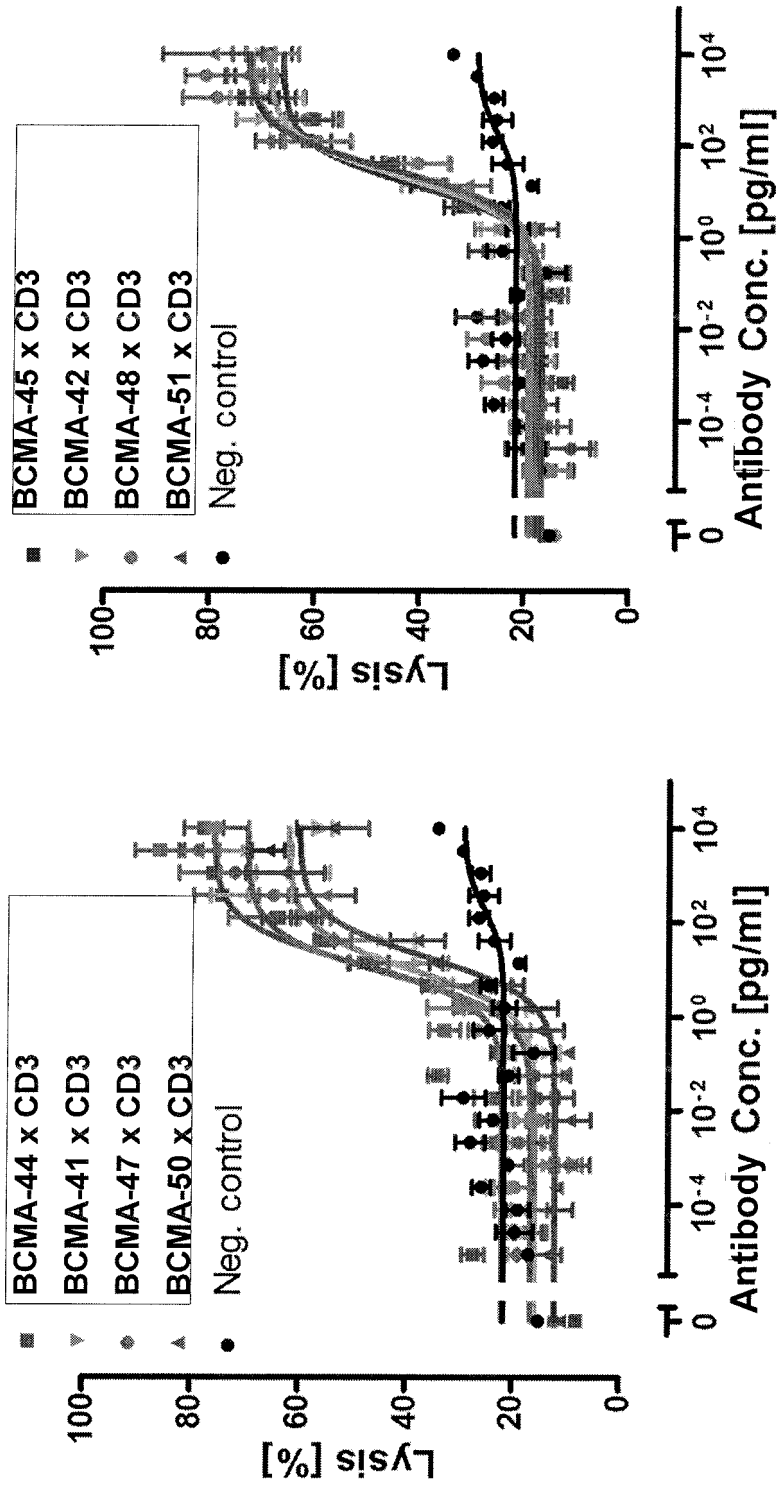


Figure A10

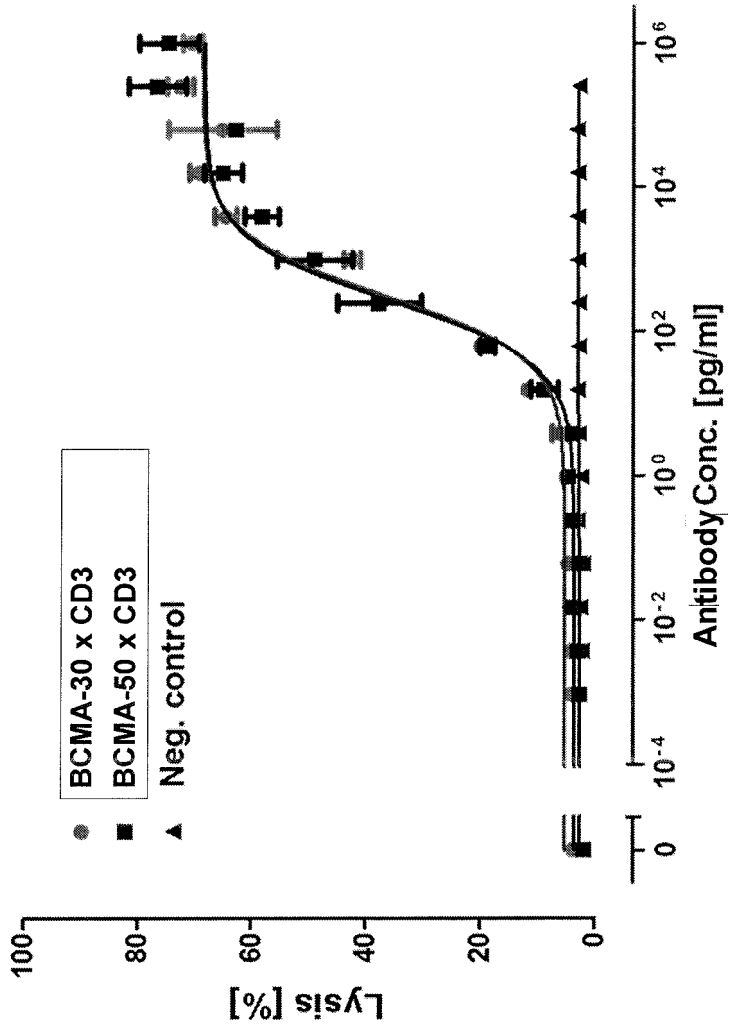

BCMA-30 x CD3
BCMA-50 x CD3
Neg. control
Lysis [%]
100
80
60
40
20
0
0
10-4
10-2
100
102
104
106
Antibody Conc. [pg/ml]

Figure A11

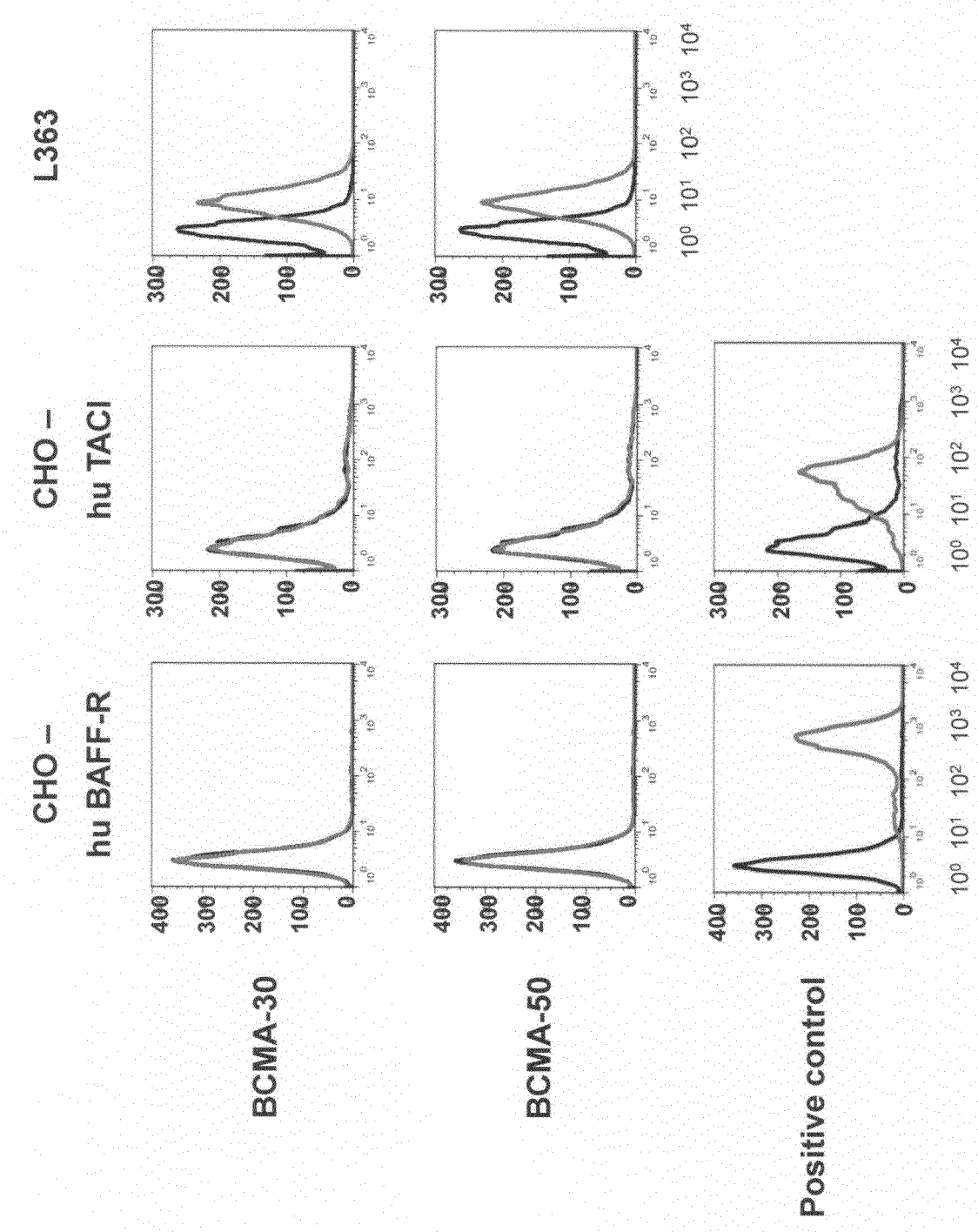

CHO – hu BAFF-R
CHO – hu TACI
L363
BCMA-30
BCMA-50
Positive control

Figure A12

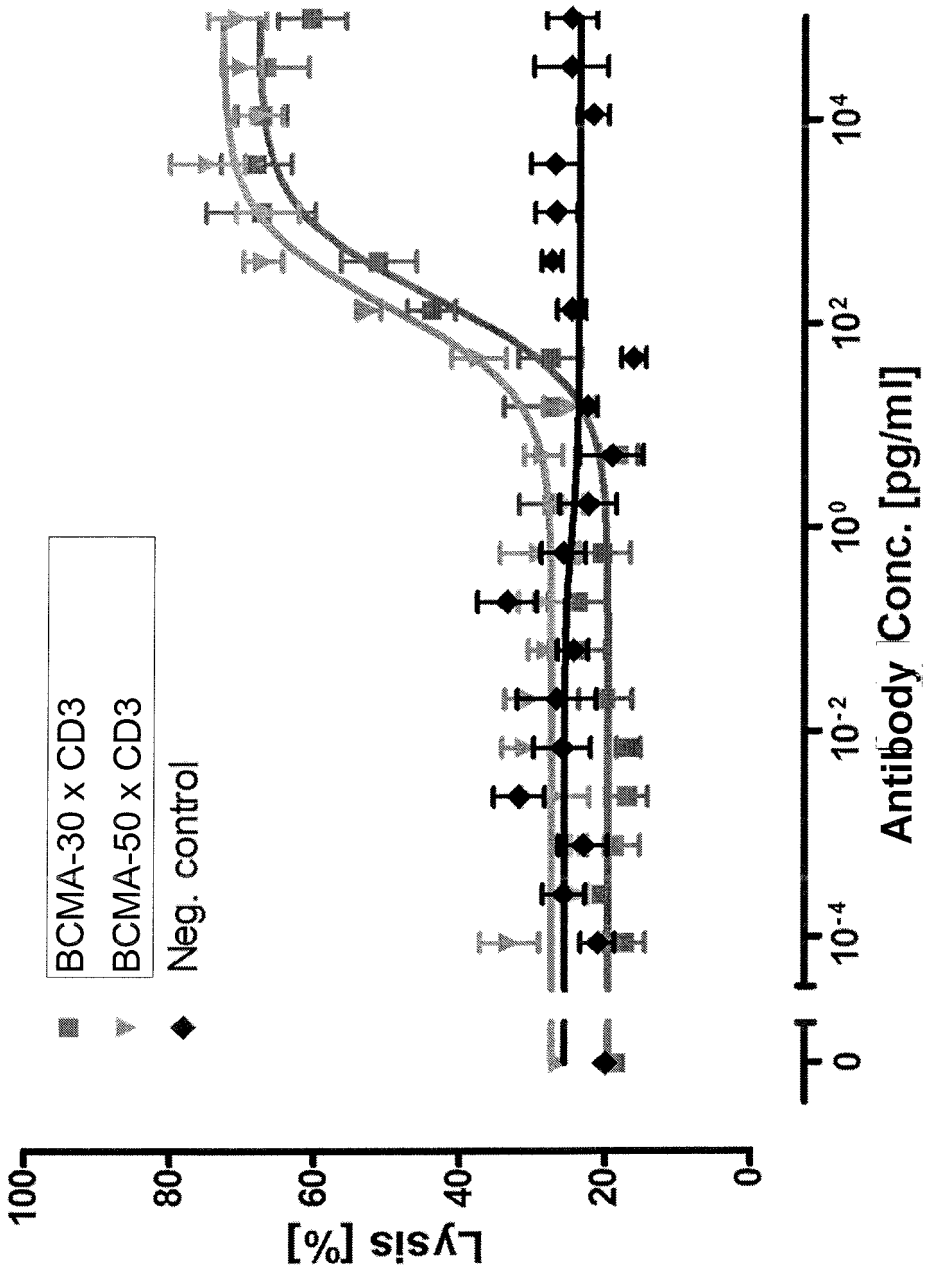

BCMA-30 x CD3
BCMA-50 x CD3
Neg. control
Lysis [%]
100
80
60
40
20
0
0
10-4
10-2
100
102
104
Antibody Conc. [pg/ml]

Figure A13

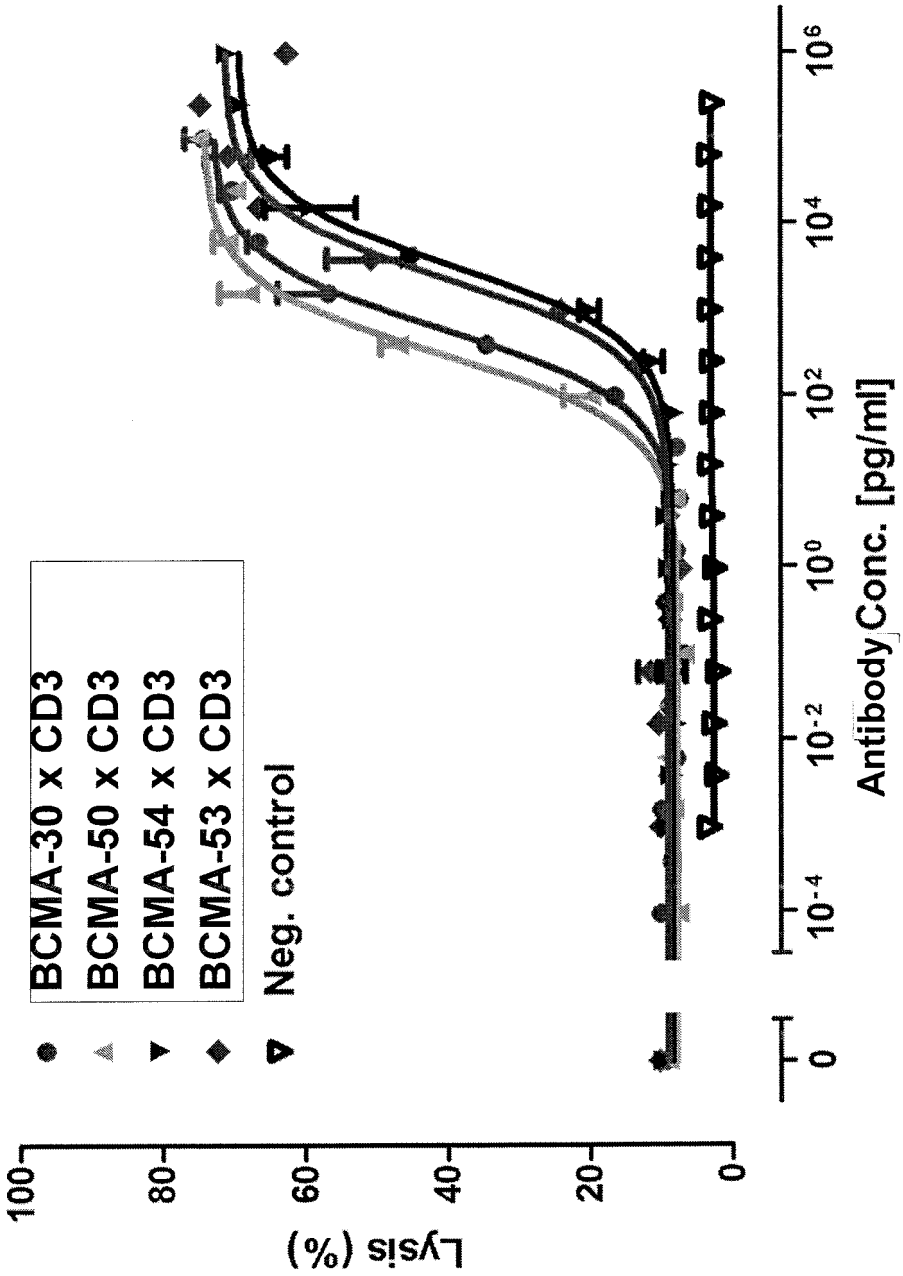

BCMA-30 x CD3
BCMA-50 x CD3
BCMA-54 x CD3
BCMA-53 x CD3
Neg. control
Lysis (%)
100
80
60
40
20
0
0
10-4
10-2
100
102
104
106
Antibody Conc. [pg/ml]

Figure A14

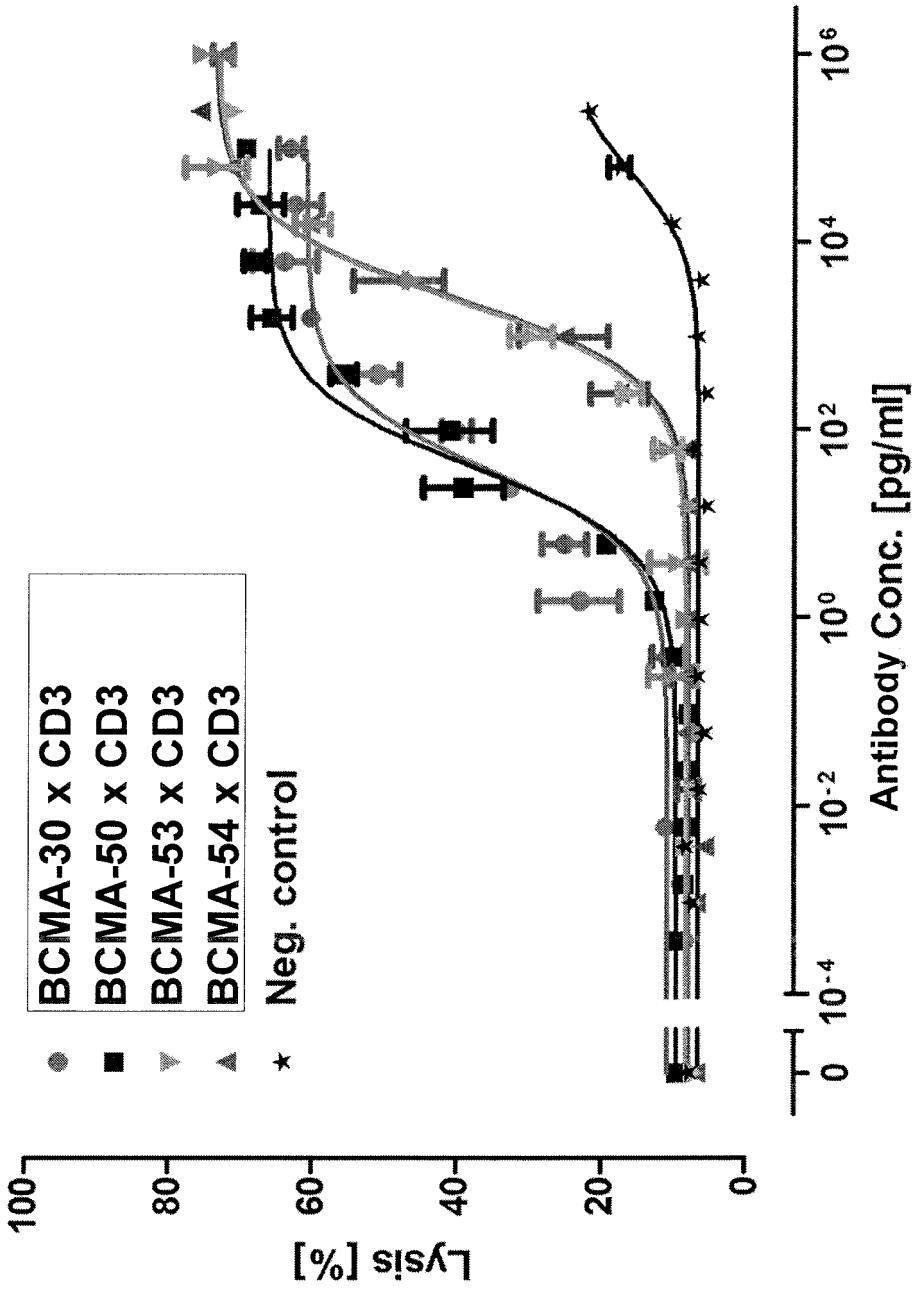

BCMA-30 x CD3
BCMA-50 x CD3
BCMA-53 x CD3
BCMA-54 x CD3
Neg. control
Lysis [%]
100
80
60
40
20
0
0
10-4
10-2
100
102
104
106
Antibody Conc. [pg/ml]

Figure A15

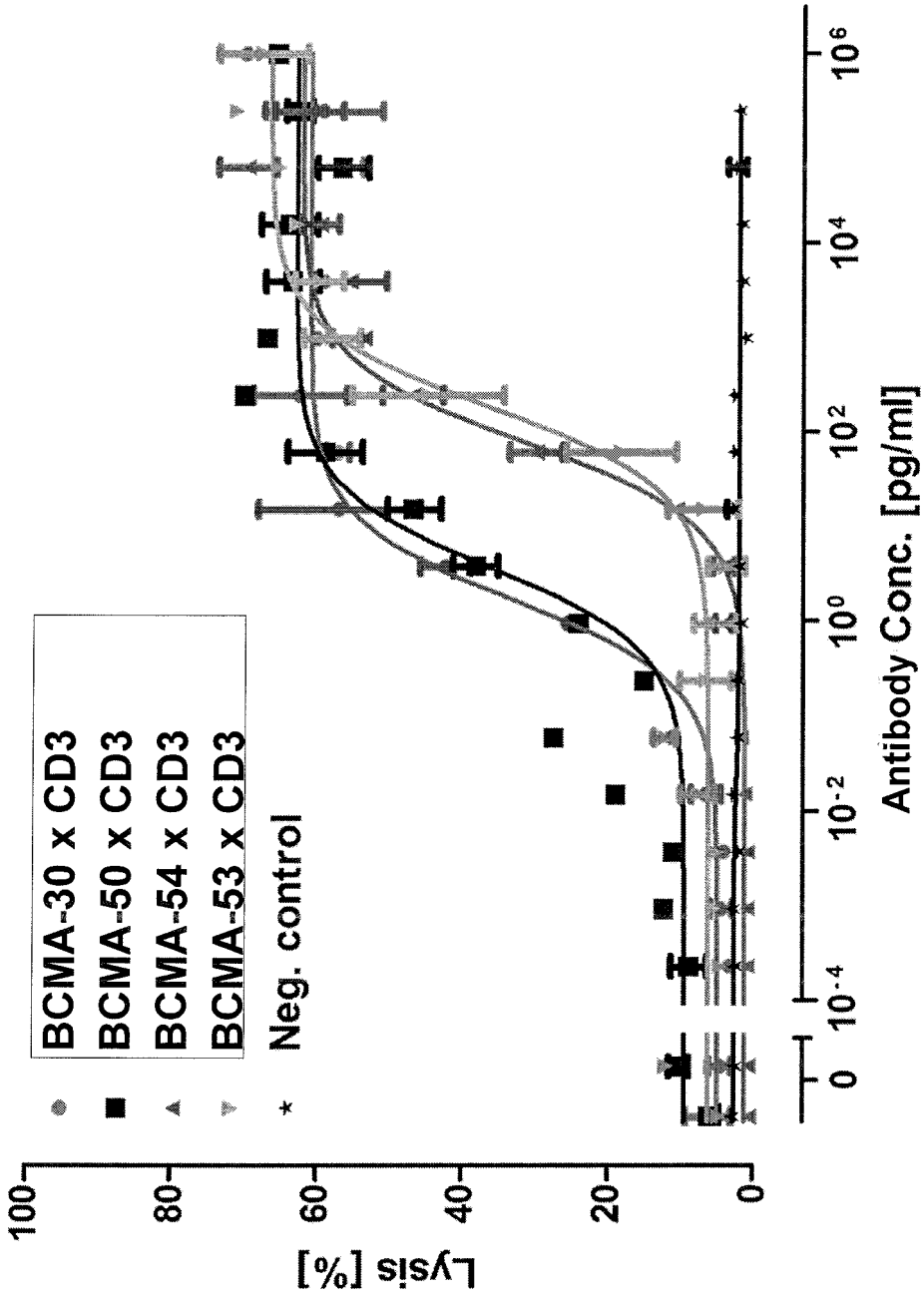

BCMA-30 x CD3
BCMA-50 x CD3
BCMA-54 x CD3
BCMA-53 x CD3
Neg. control
Lysis [%]
100
80
60
40
20
0
0
10-4
10-2
100
102
104
106
Antibody Conc. [pg/ml]

Figure A16

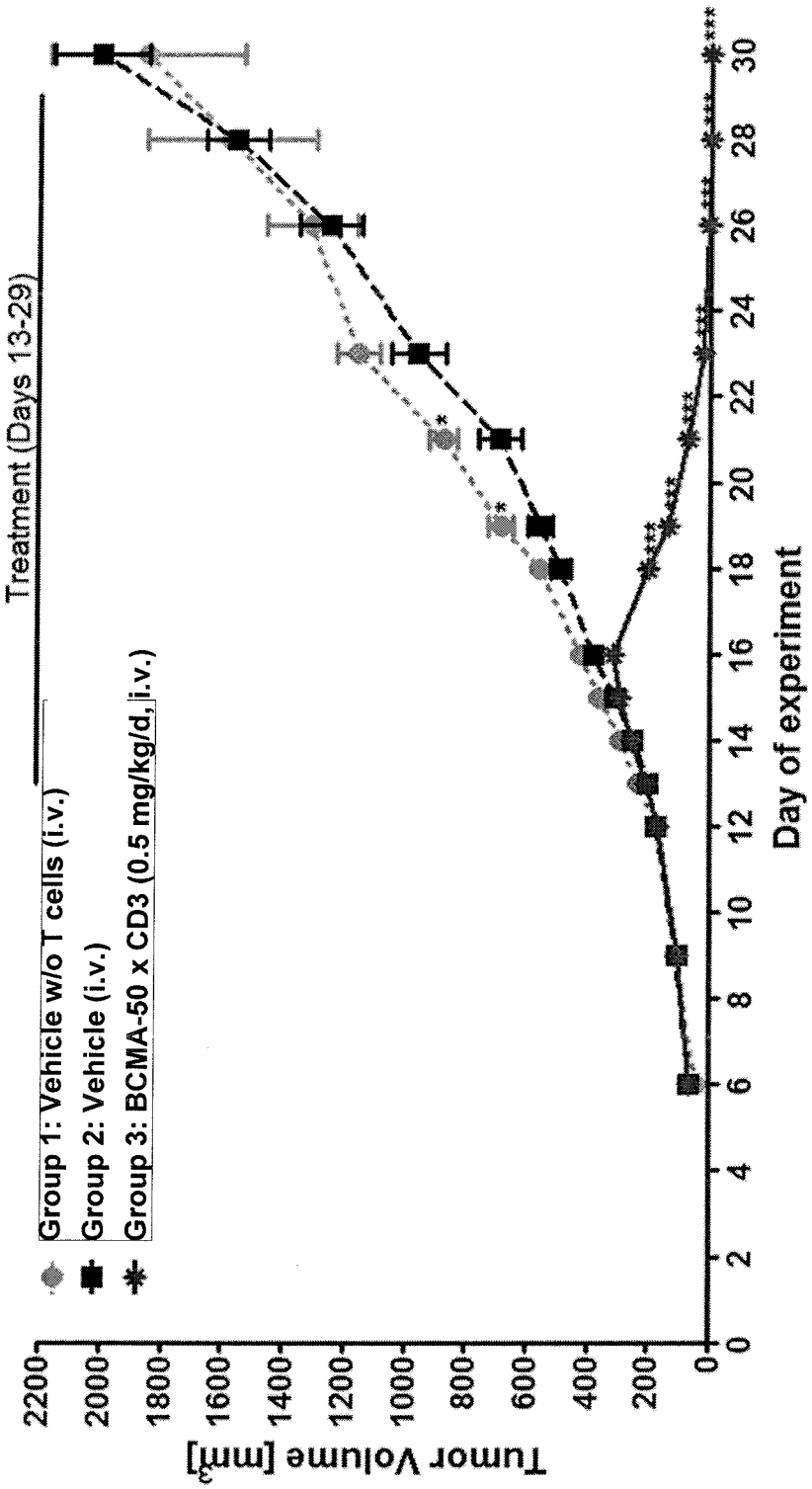
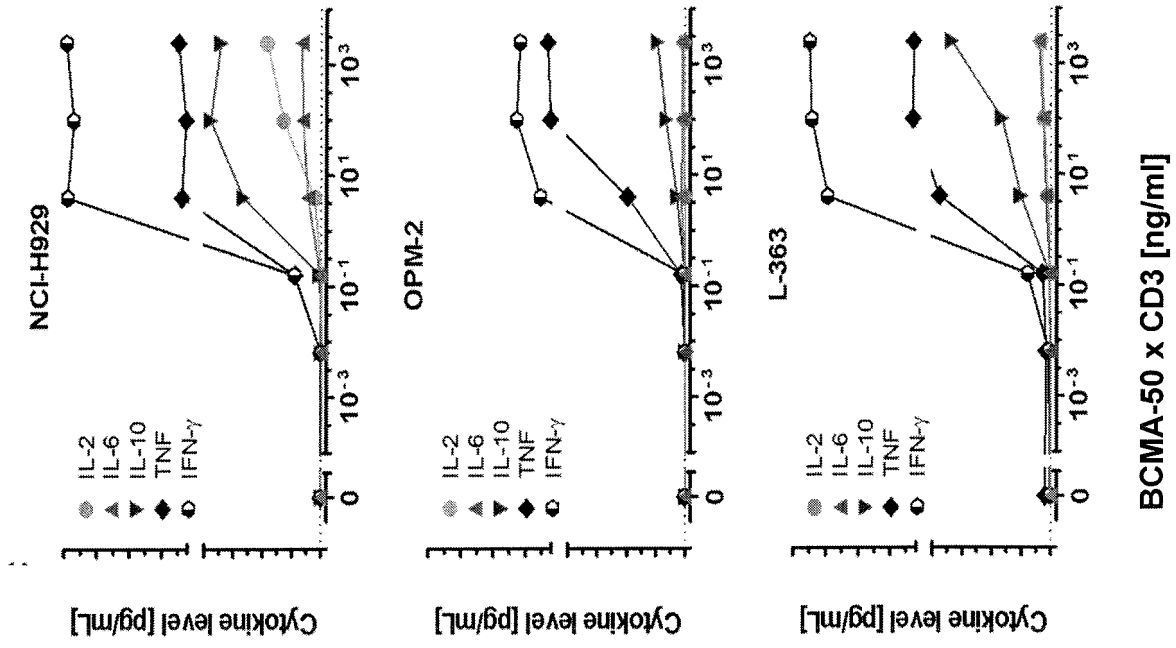

Treatment (Days 13-29)
Group 1: Vehicle w/o T cells (i.v.)
Group 2: Vehicle (i.v.)
Group 3: BCMA-50 x CD3 (0.5 mg/kg/d, i.v.)
Tumor Volume [mm³]
Day of experiment
0
200
400
600
800
1000
1200
1400
1600
1800
2000
2200
0
2
4
6
8
10
12
14
16
18
20
22
24
26
28
30

Figure A17


NCI-H929
OPM-2
L-363
IL-2
IL-6
IL-10
TNF
IFN-γ
Cytokine level [pg/mL]
0
10^-3
10^-1
10^1
10^3
BCMA-50 x CD3 [ng/ml]