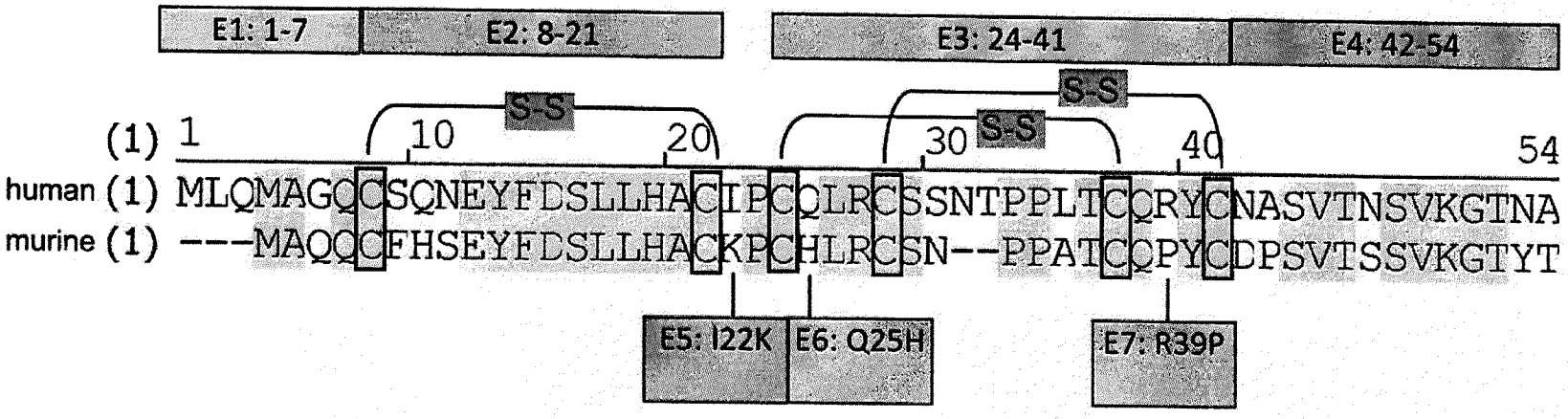
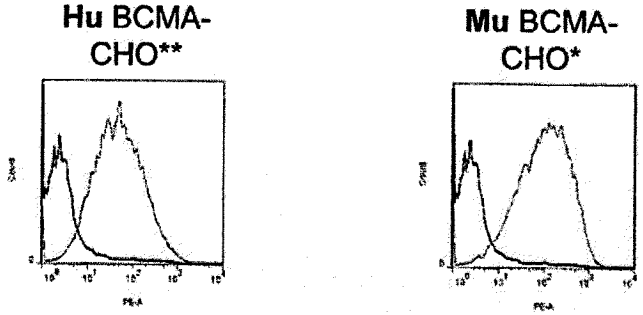
Figure 1



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

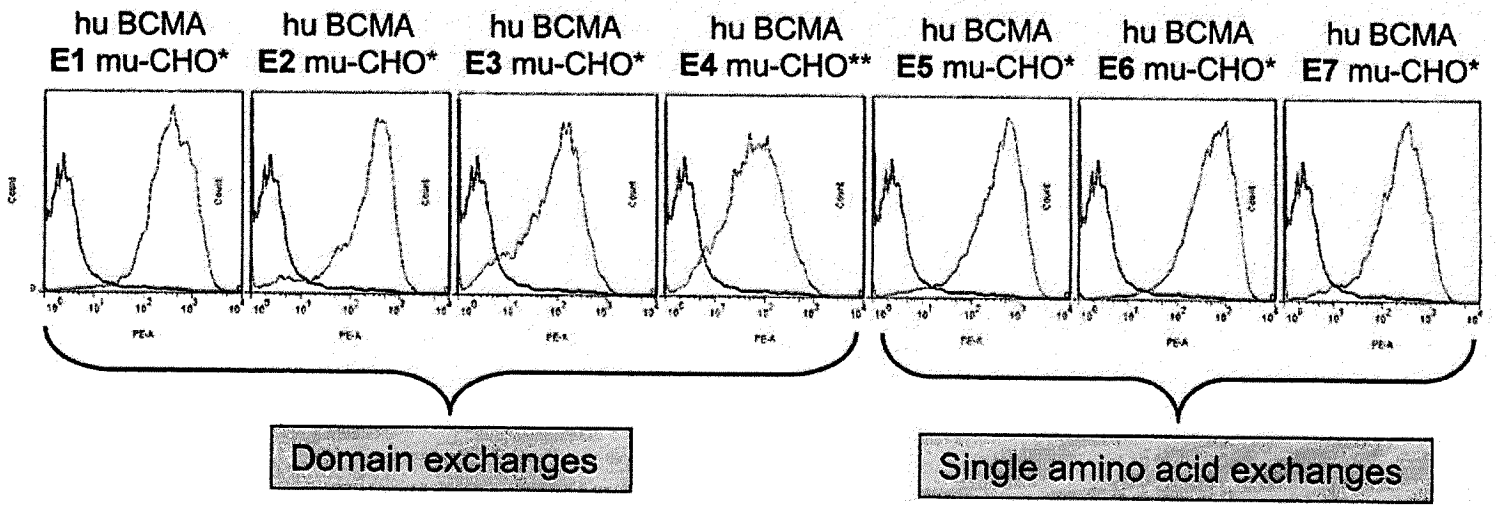


Figure 3

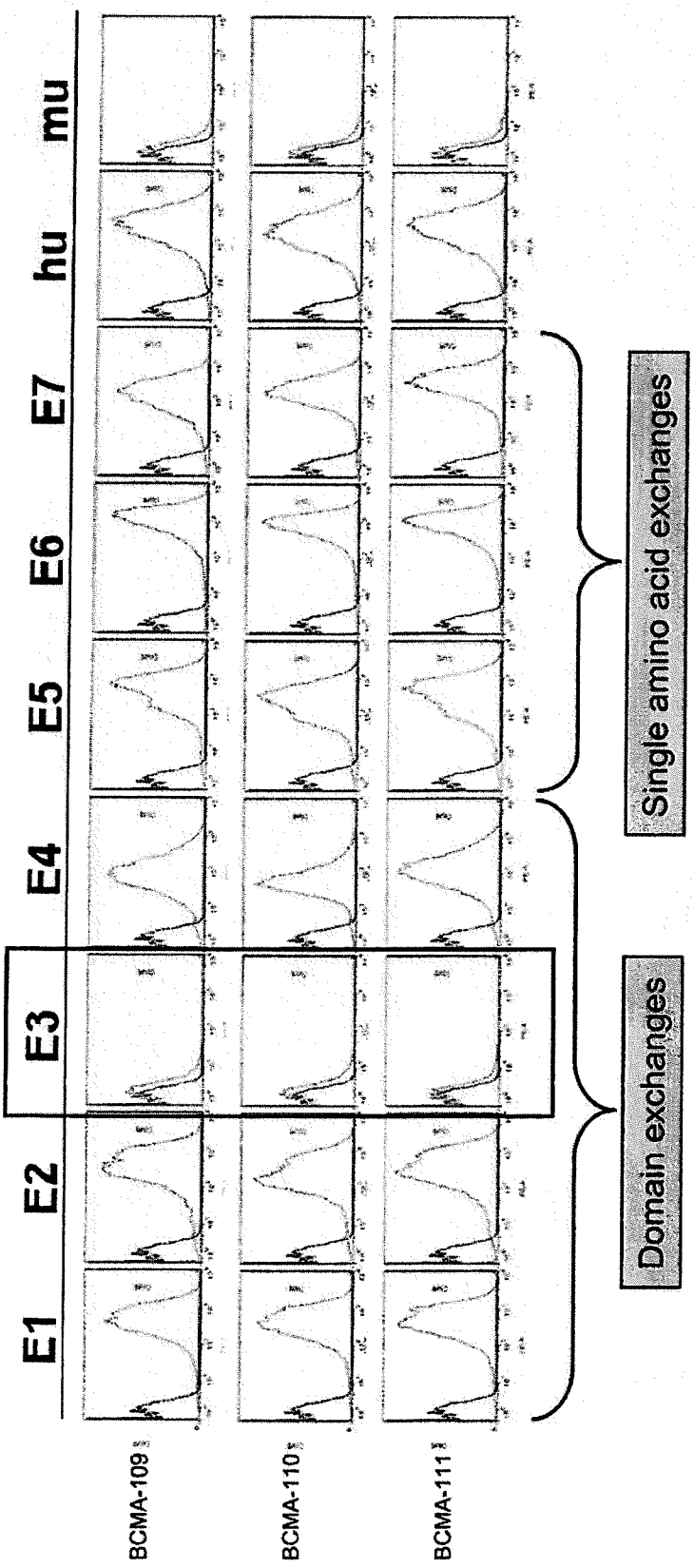

E1
E2
E3
E4
E5
E6
E7
hu
mu
BCMA-109
BCMA-110
BCMA-111
Domain exchanges
Single amino acid exchanges

Figure 3 (continued)

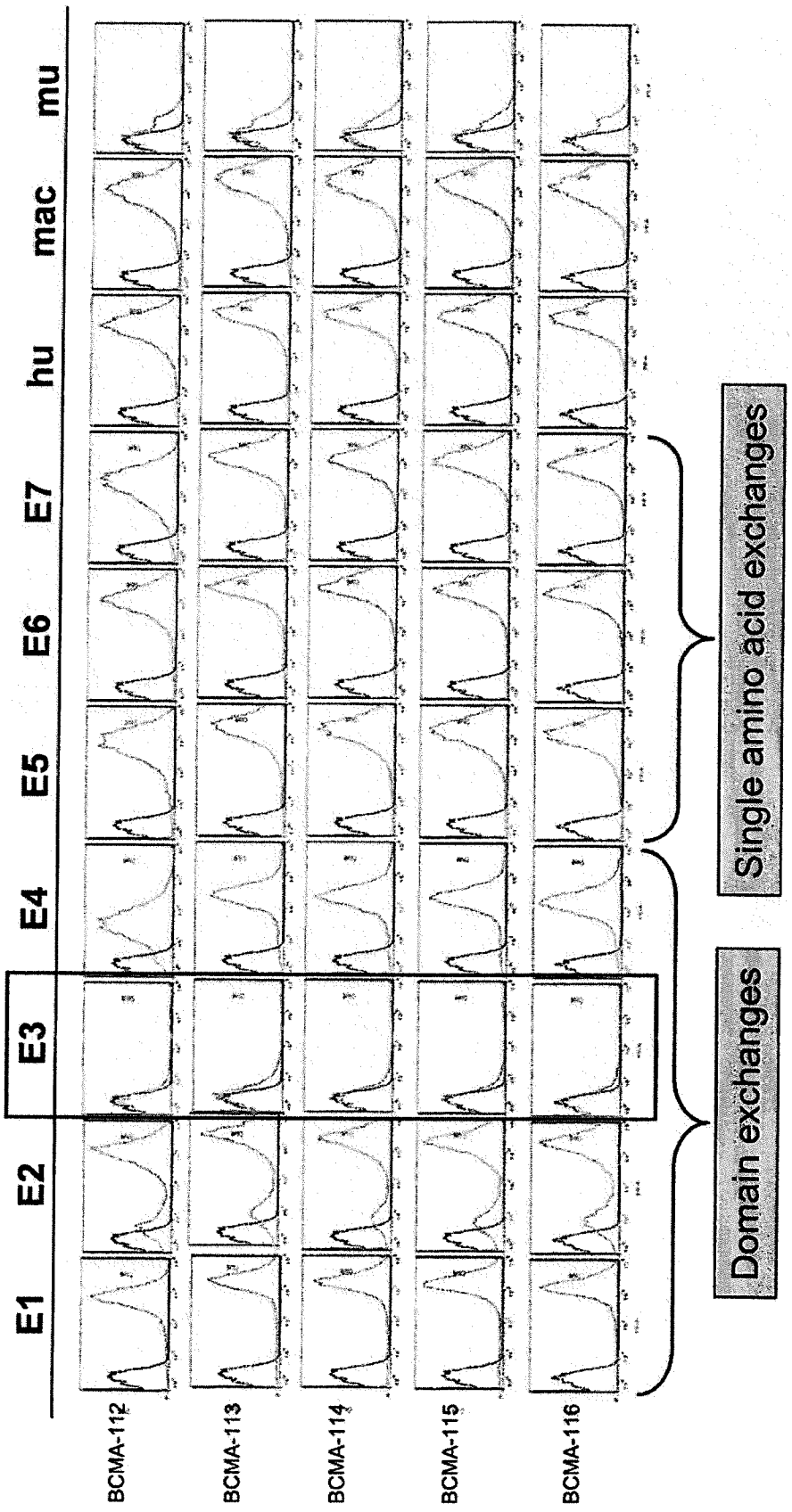


Figure 4

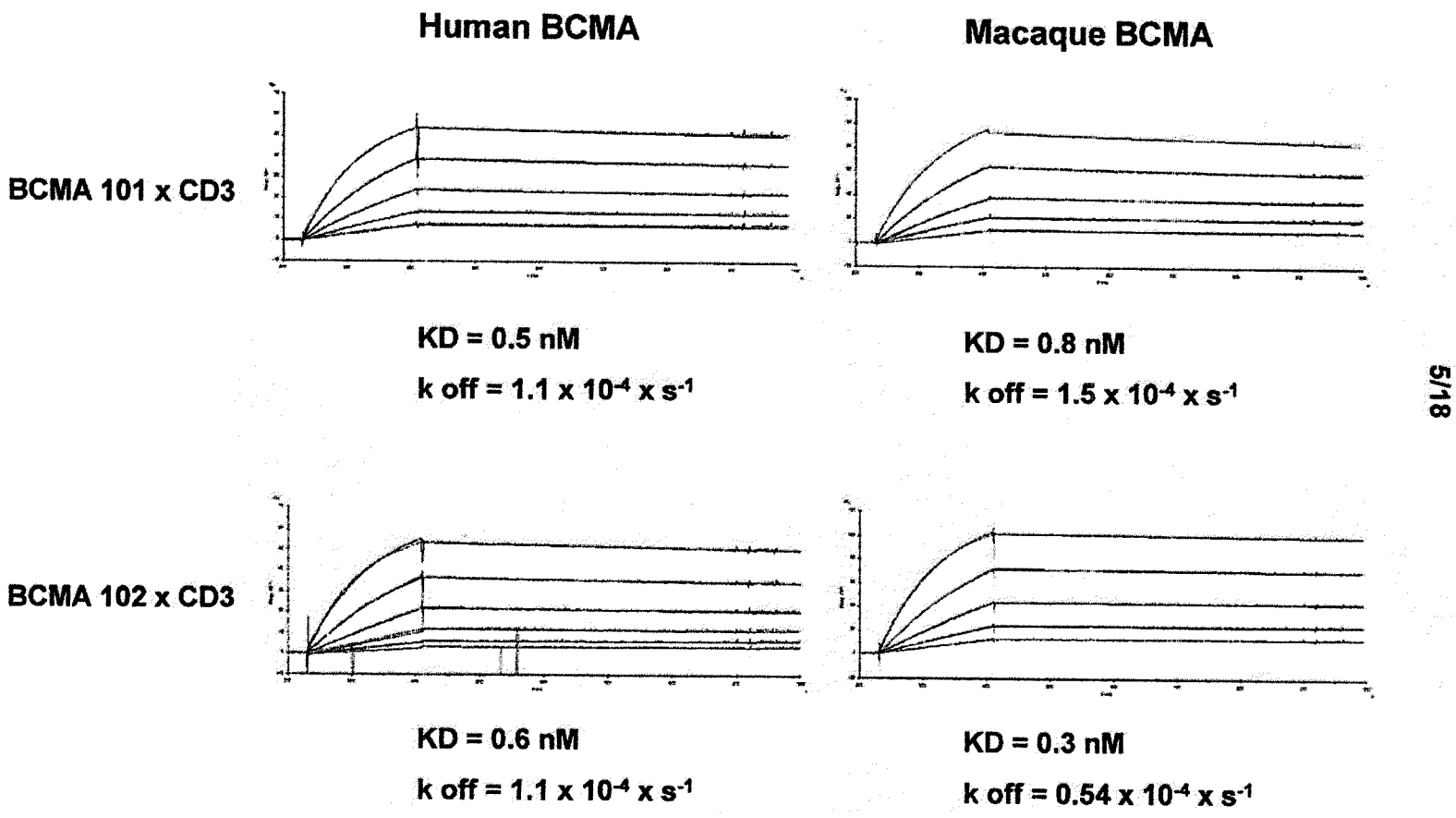
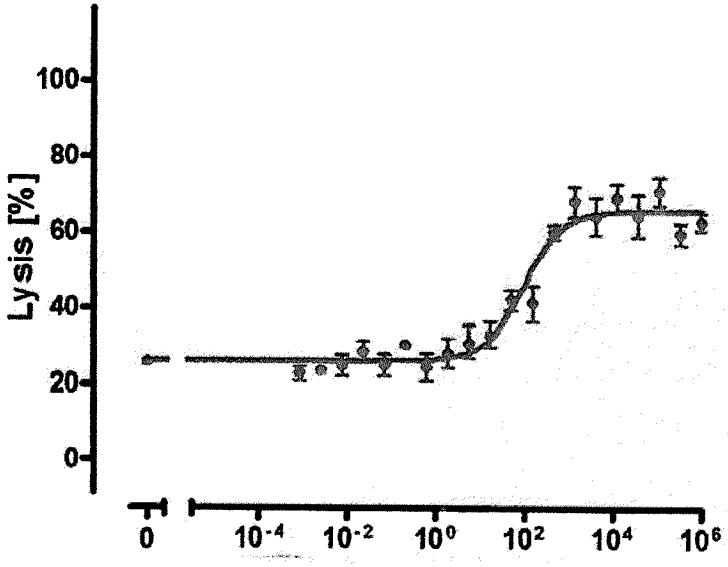
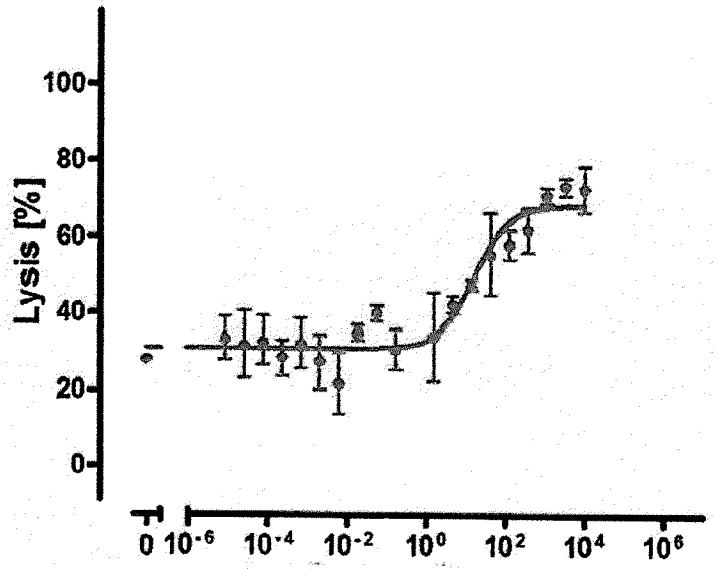

Human BCMA
Macaque BCMA
BCMA 101 x CD3
KD = 0.5 nM
k off = 1.1 x 10-4 x s-1
KD = 0.8 nM
k off = 1.5 x 10-4 x s-1
BCMA 102 x CD3
KD = 0.6 nM
k off = 1.1 x 10-4 x s-1
KD = 0.3 nM
k off = 0.54 x 10-4 x s-1

Figure 5



Target: human BCMA-transfected CHO cells

EC_{50} = 44.4 pg/ml



Target: macaque BCMA-transfected CHO cells

EC_{50} = 14.2 pg/ml

Figure 6

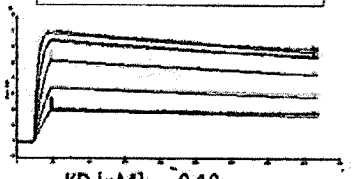
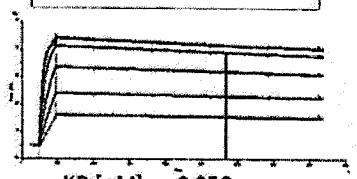
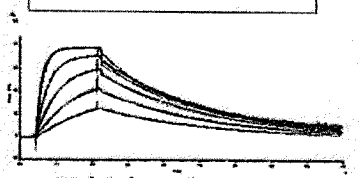
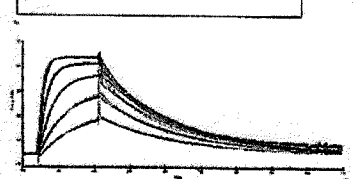
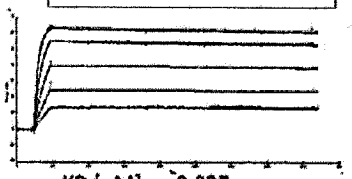
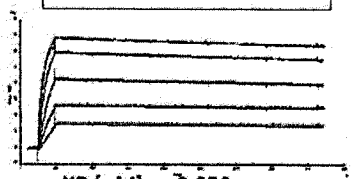
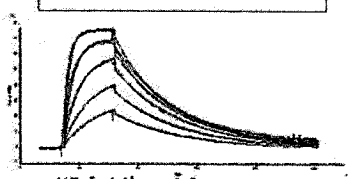
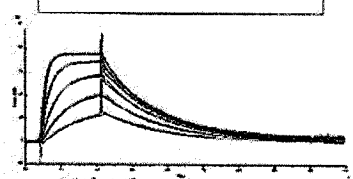
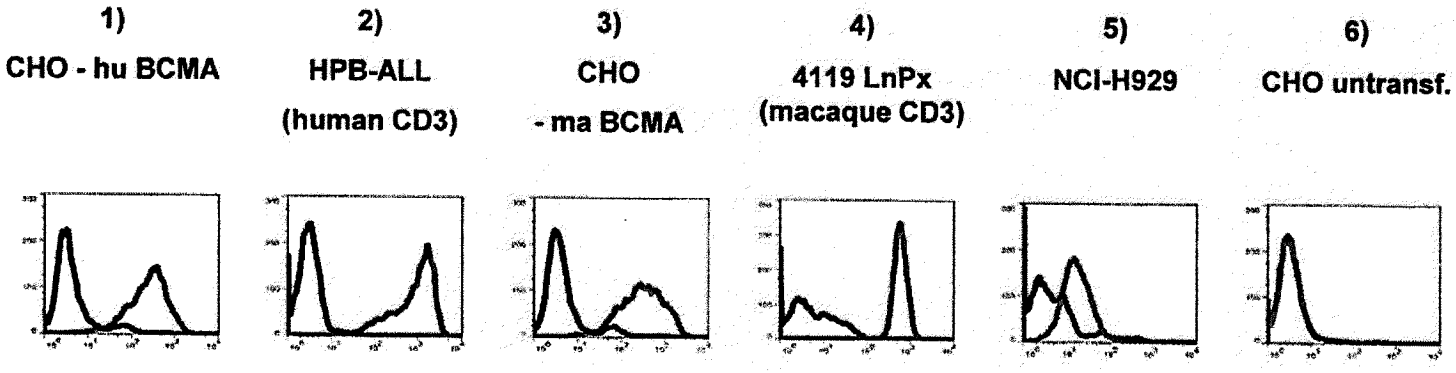
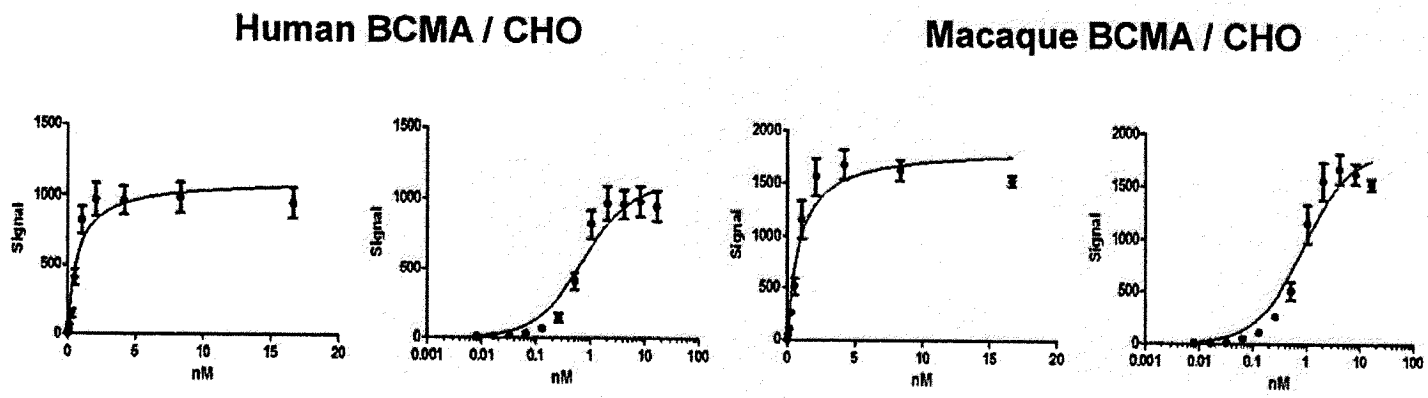
Human BCMA	Macaque BCMA	Human CD3	Macaque CD3
BCMA-34 x CD3	BCMA-34 x CD3	BCMA-34 x CD3	BCMA-34 x CD3
			
KD [nM] = 0.10 ka [1/Ms]: 4.8 x 10E5 Kd [1/s]: 4.9 x 10E-5	KD [nM] = 0.058 ka [1/Ms]: 4.8 x 10E5 Kd [1/s]: 2.8 x 10E-5	KD [nM] = 2.9 ka [1/Ms]: 1.1 x 10E6 Kd [1/s]: 3.1 x 10E-3	KD [nM] = 2.8 ka [1/Ms]: 1.5 x 10E6 Kd [1/s]: 4.3 x 10E-3
BCMA-98 x CD3	BCMA-98 x CD3	BCMA-98 x CD3	BCMA-98 x CD3
			
KD [nM] = 0.027 ka [1/Ms]: 3.4 x 10E5 Kd [1/s]: 9.2 x 10E-6	KD [nM] = 0.059 ka [1/Ms]: 3.3 x 10E5 Kd [1/s]: 1.9 x 10E-5	KD [nM] = 4.2 ka [1/Ms]: 1.1 x 10E6 Kd [1/s]: 4.4 x 10E-3	KD [nM] = 4.1 ka [1/Ms]: 1.4 x 10E6 Kd [1/s]: 5.7 x 10E-3

Figure 7



BCMA-98 x CD3

Figure 8



BCMA-20 x CD3

Figure 9

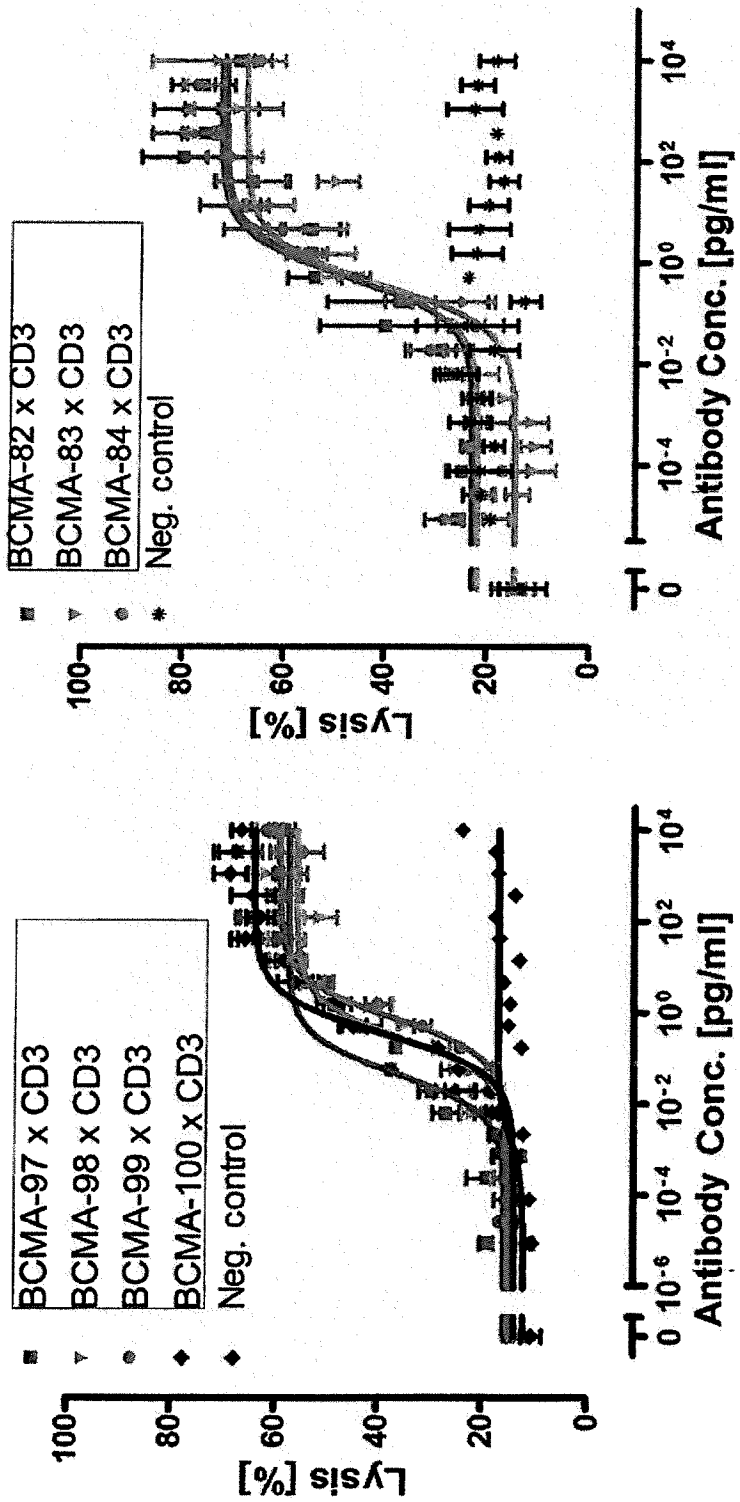

BCMA-82 x CD3
BCMA-83 x CD3
BCMA-84 x CD3
Neg. control
Lysis [%]
100
80
60
40
20
0
0
10-4
10-2
100
102
104
Antibody Conc. [pg/ml]
BCMA-97 x CD3
BCMA-98 x CD3
BCMA-99 x CD3
BCMA-100 x CD3
Neg. control
Lysis [%]
0 10-6 10-4 10-2 100 102 104
Antibody Conc. [pg/ml]

Figure 10

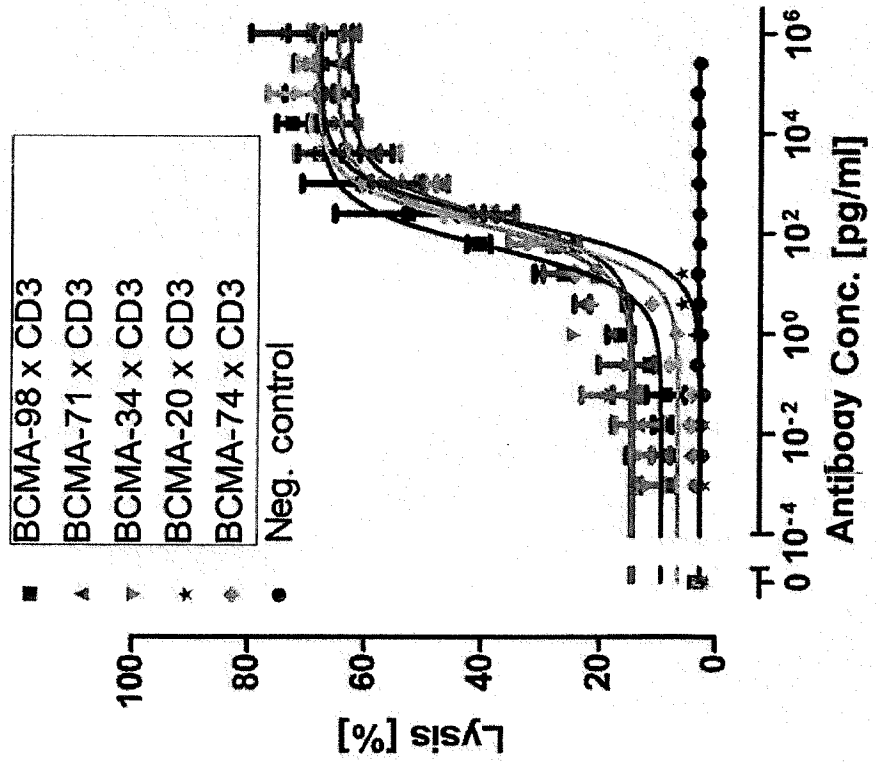

BCMA-98 x CD3
BCMA-71 x CD3
BCMA-34 x CD3
BCMA-20 x CD3
BCMA-74 x CD3
Neg. control
Lysis [%]
100
80
60
40
20
0
0
10-4
10-2
100
102
104
106
Antibody Conc. [pg/ml]

Figure 11

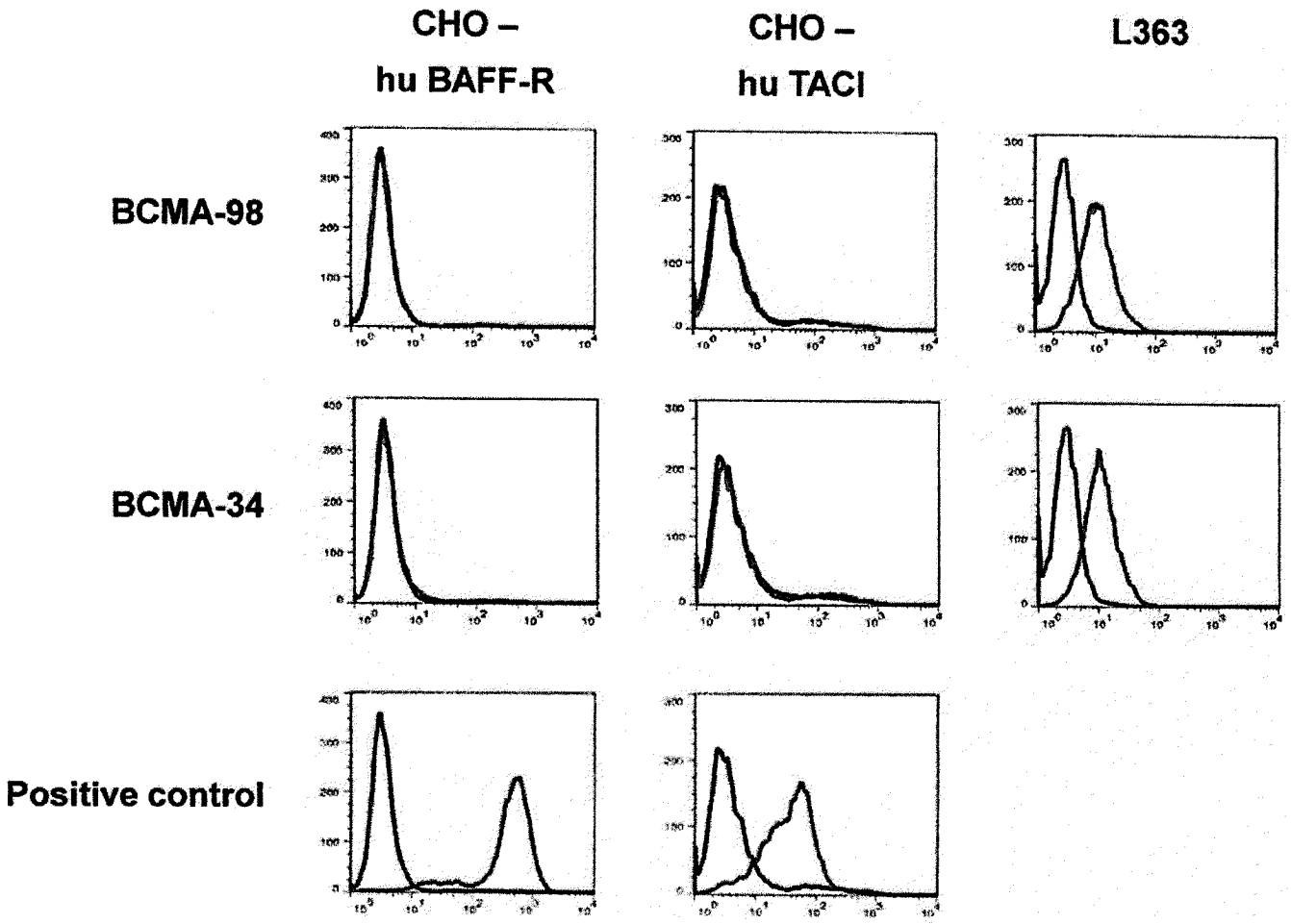

CHO –
hu BAFF-R
CHO –
hu TACI
L363
BCMA-98
BCMA-34
Positive control

Figure 12

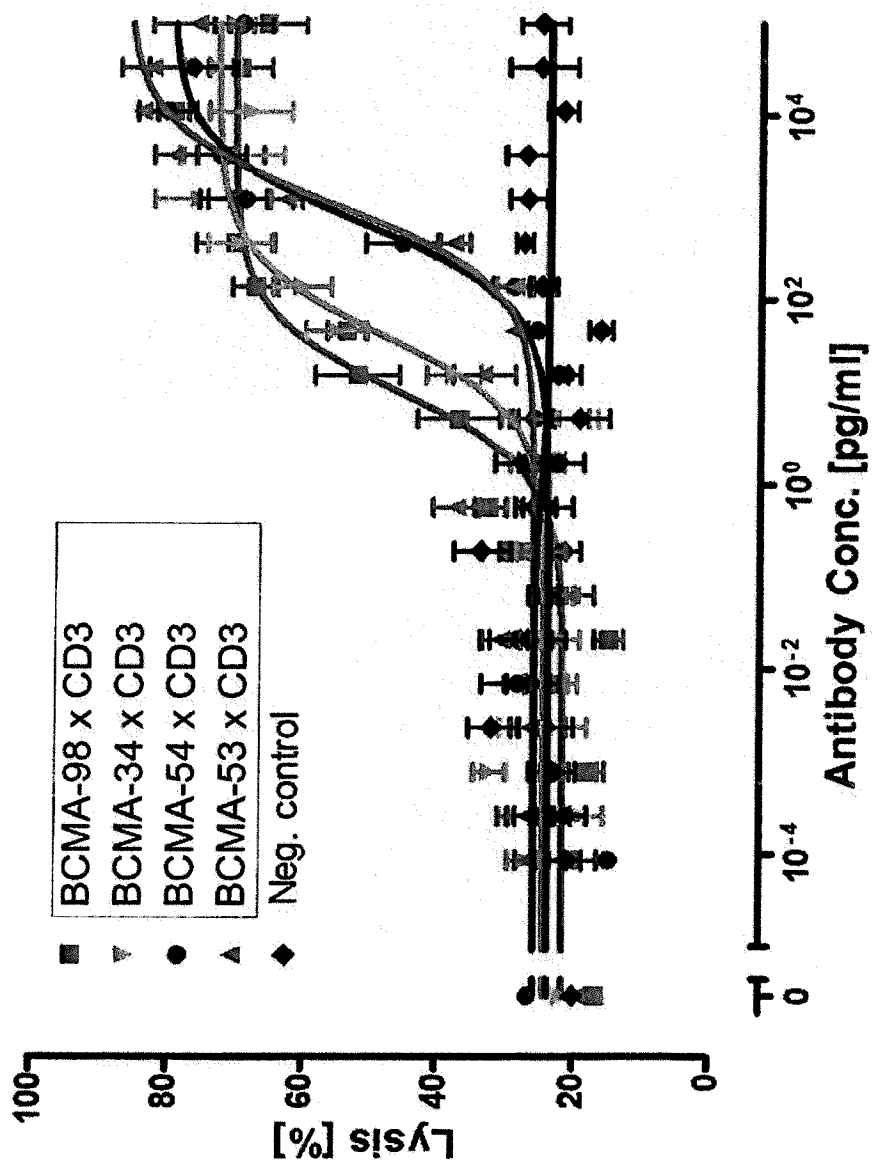

BCMA-98 x CD3
BCMA-34 x CD3
BCMA-54 x CD3
BCMA-53 x CD3
Neg. control
Lysis [%]
100
80
60
40
20
0
0
10-4
10-2
100
102
104
Antibody Conc. [pg/ml]

Figure 13

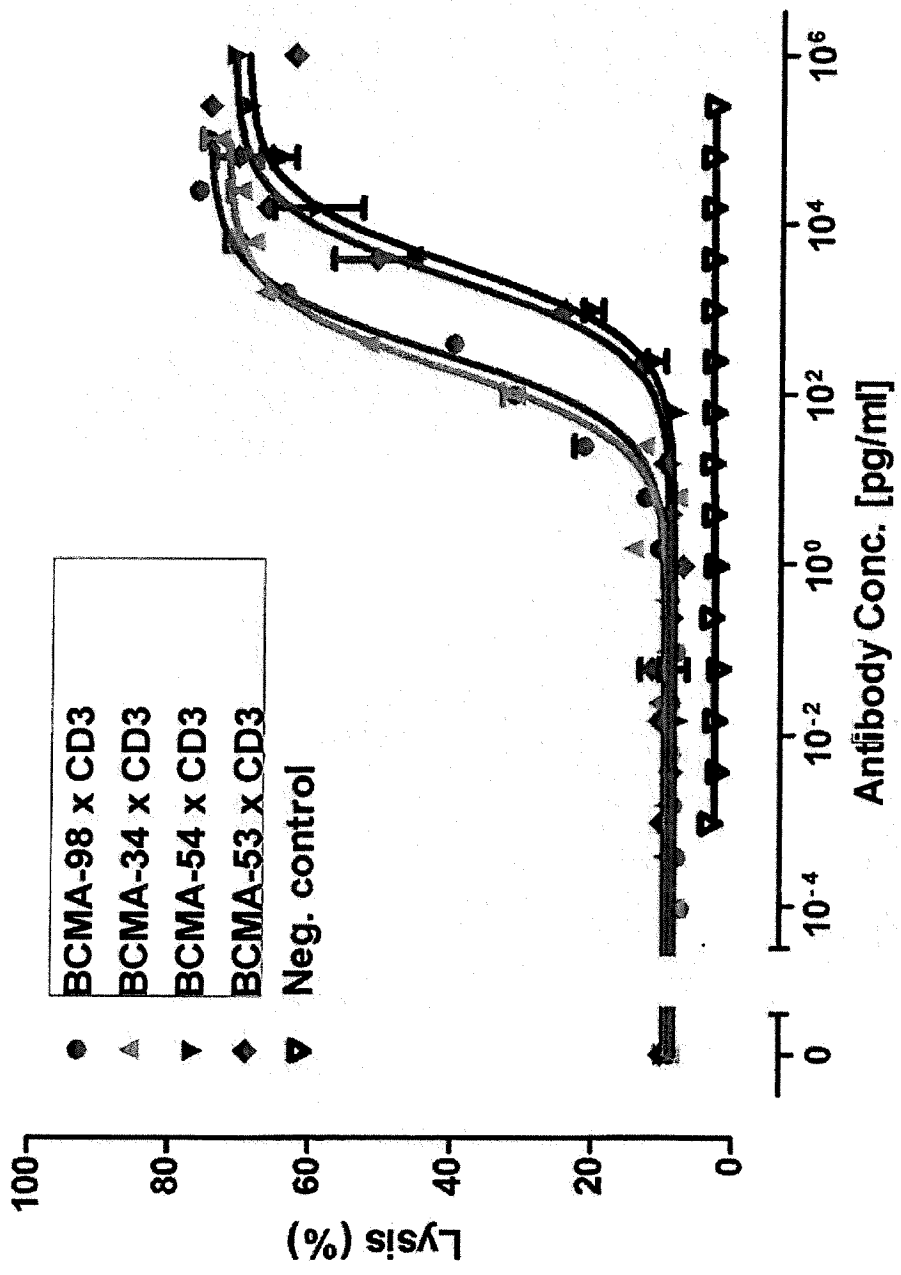

BCMA-98 x CD3
BCMA-34 x CD3
BCMA-54 x CD3
BCMA-53 x CD3
Neg. control
Lysis (%)
100
80
60
40
20
0
0
10-4
10-2
100
102
104
106
Antibody Conc. [pg/ml]

Figure 14

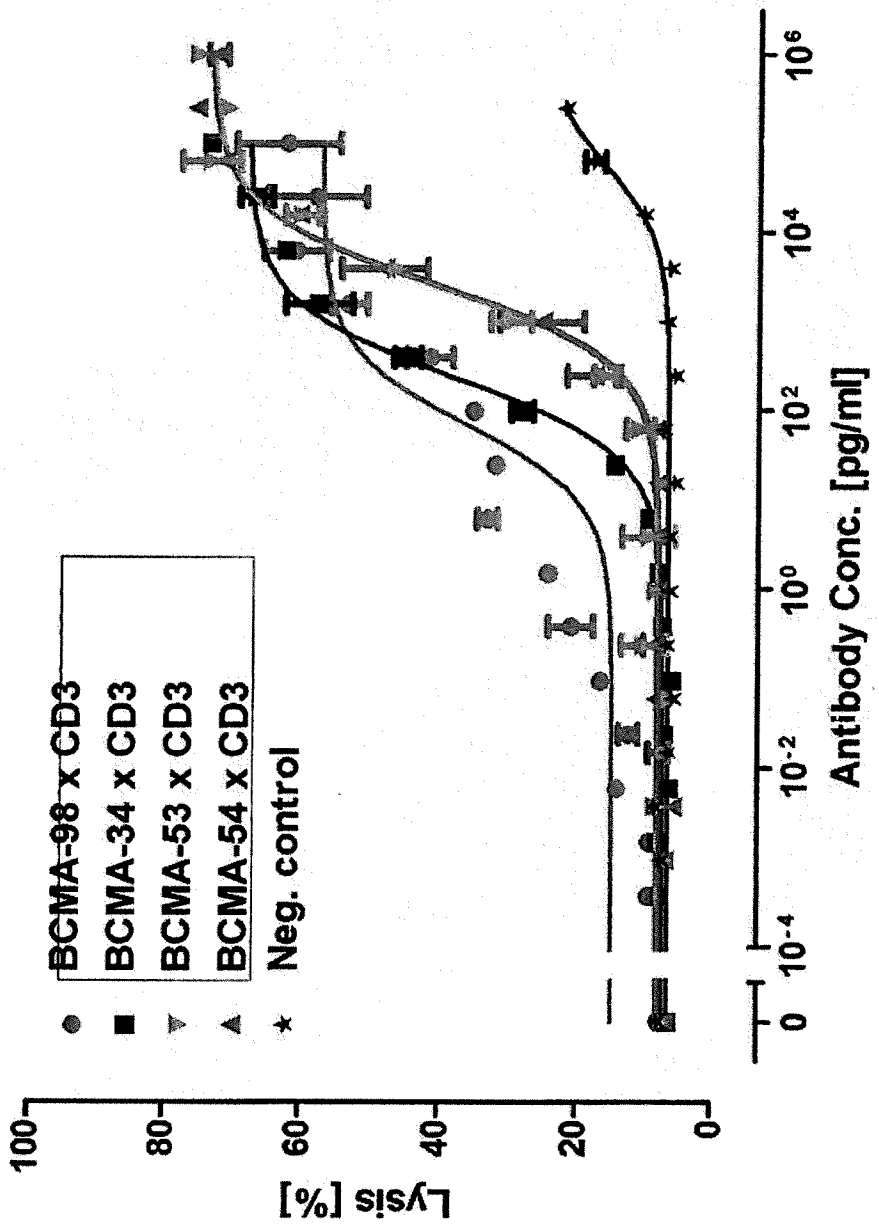

BCMA-98 x CD3
BCMA-34 x CD3
BCMA-53 x CD3
BCMA-54 x CD3
Neg. control
Lysis [%]
100
80
60
40
20
0
0
10-4
10-2
100
102
104
106
Antibody Conc. [pg/ml]

Figure 15

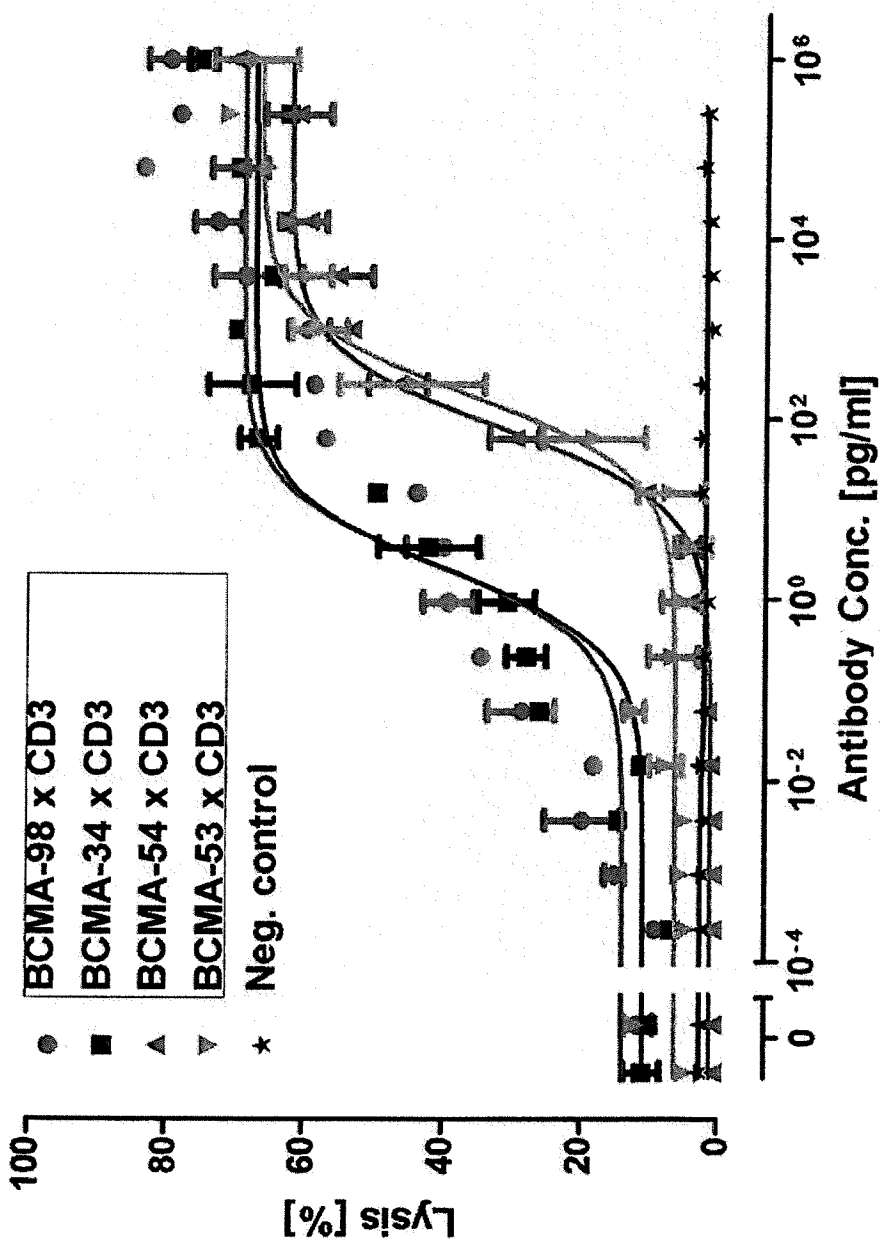

BCMA-98 x CD3
BCMA-34 x CD3
BCMA-54 x CD3
BCMA-53 x CD3
Neg. control
Lysis [%]
100
80
60
40
20
0
0
10-4
10-2
100
102
104
106
Antibody Conc. [pg/ml]

Figure 16

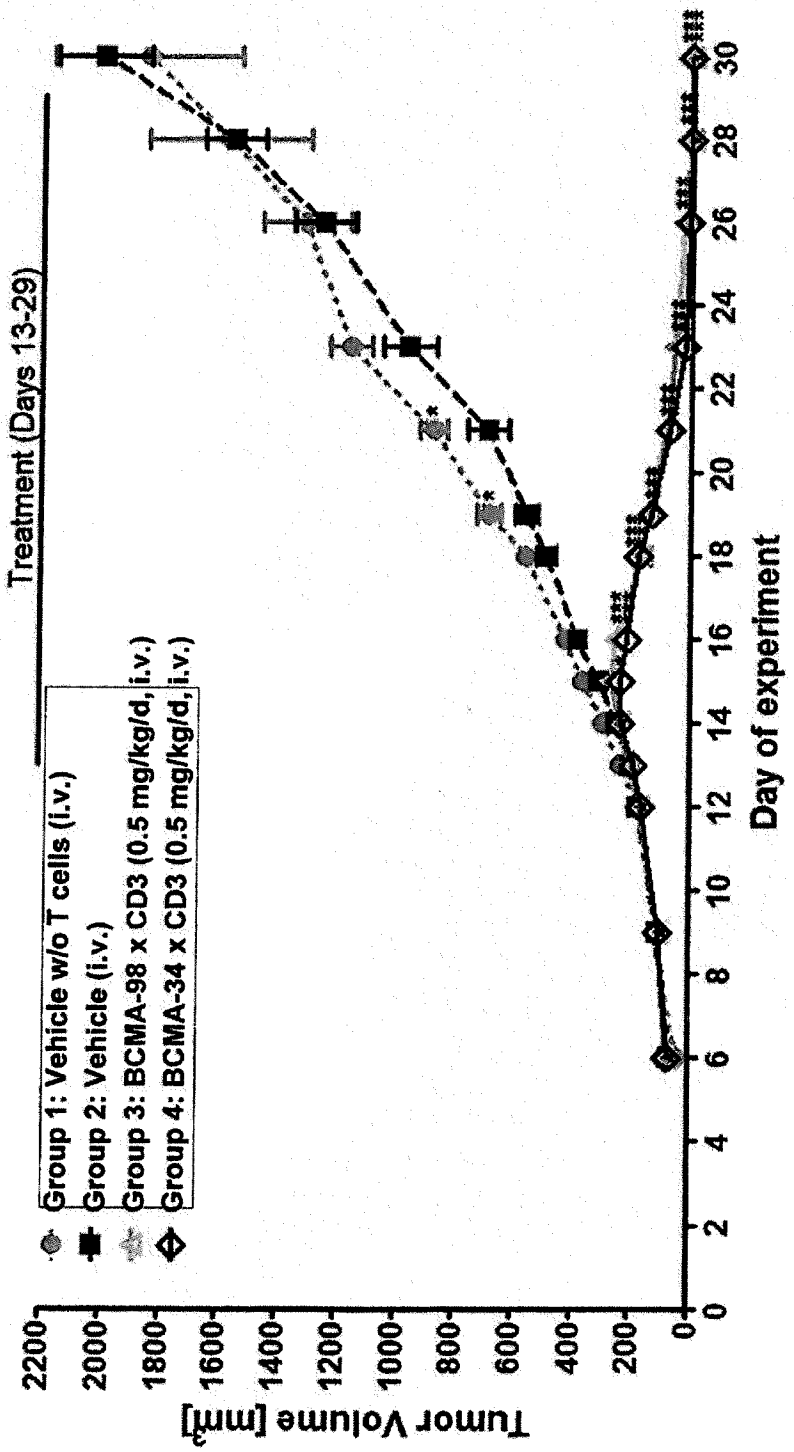
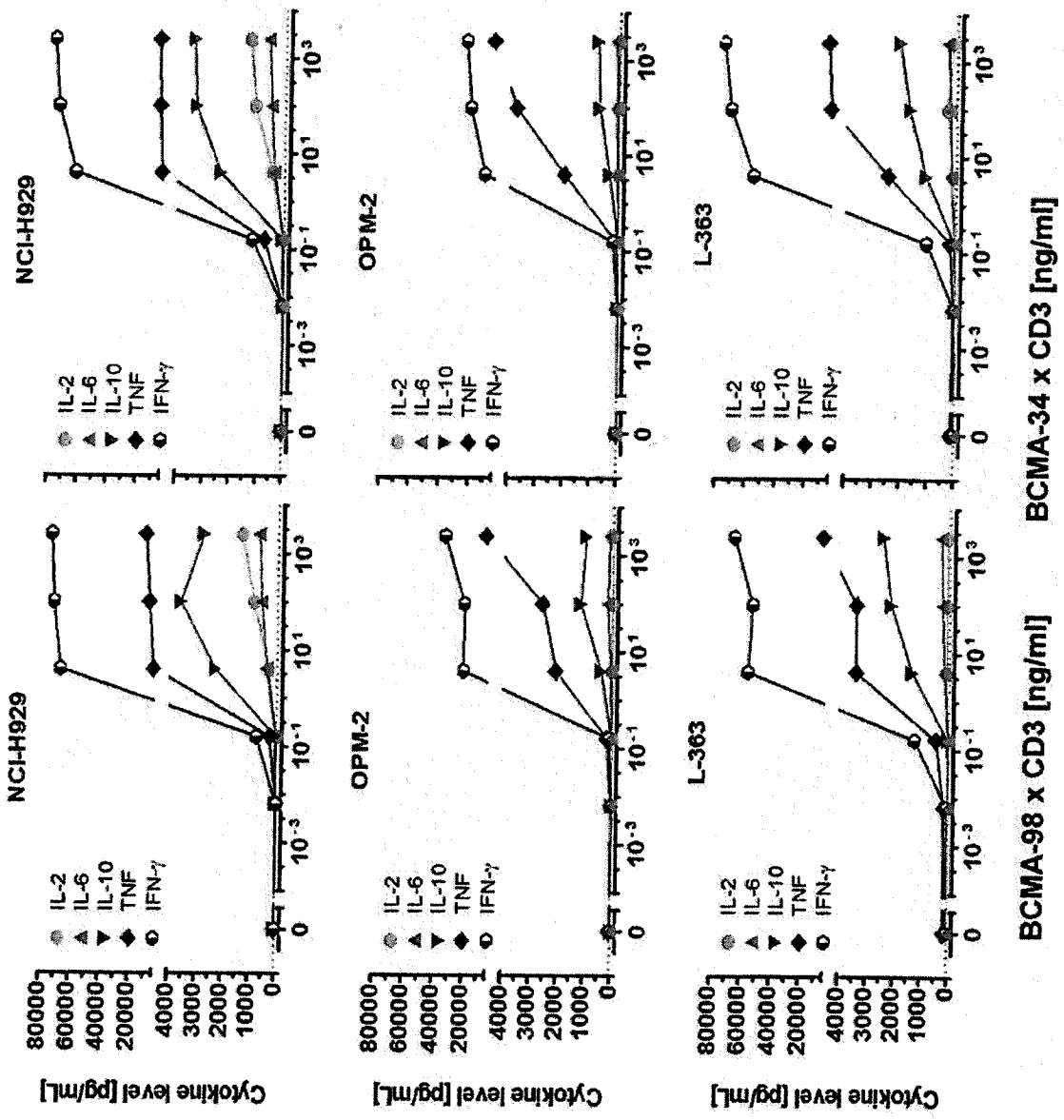

Treatment (Days 13-29)
Group 1: Vehicle w/o T cells (i.v.)
Group 2: Vehicle (i.v.)
Group 3: BCMA-98 x CD3 (0.5 mg/kg/d, i.v.)
Group 4: BCMA-34 x CD3 (0.5 mg/kg/d, i.v.)
Tumor Volume [mm³]
Day of experiment
0
200
400
600
800
1000
1200
1400
1600
1800
2000
2200
0
2
4
6
8
10
12
14
16
18
20
22
24
26
28
30

Figure 17


NCI-H929
OPM-2
L-363
IL-2
IL-6
IL-10
TNF
IFN-γ
Cytokine level [pg/mL]
BCMA-98 x CD3 [ng/ml]
BCMA-34 x CD3 [ng/ml]