```
  1 mgsdvrdlna llpavpslgg gggcalpvsg aaqwapvldf appgasaygs lggpapppap
 61 pppppppphs fikqepswgg aepheeqcls aftvhfsgqf tgtagacryg pfgppppsqa
121 ssgqarmfpn apylpscles qpairnqgys tvtfdgtpsy ghtpshhaaq fpnhsfkhed
181 pmgqqgslge qqysvpppvy gchtptdsct gsqalllrtp yssdnlyqmt sqlecmtwnq
241 mnlgatlkgv aagssssvkw tegqsnhstg yesdnhttpi lcgaqyriht hgvfrgiqdv
301 rrvpgvaptl vrsasetsek rpfmcaypgc nkryfklshl qmhsrkhtge kpyqcdfkdc
361 errfsrsdql krhqrrhtgv kpfqcktcqr kfsrsdhlkt htrthtgkts ekpfscrwps
421 cqkkfarsde lvrhhnmhqr nmtklqlal (SEQ ID NO: 118)
```

Figure 1

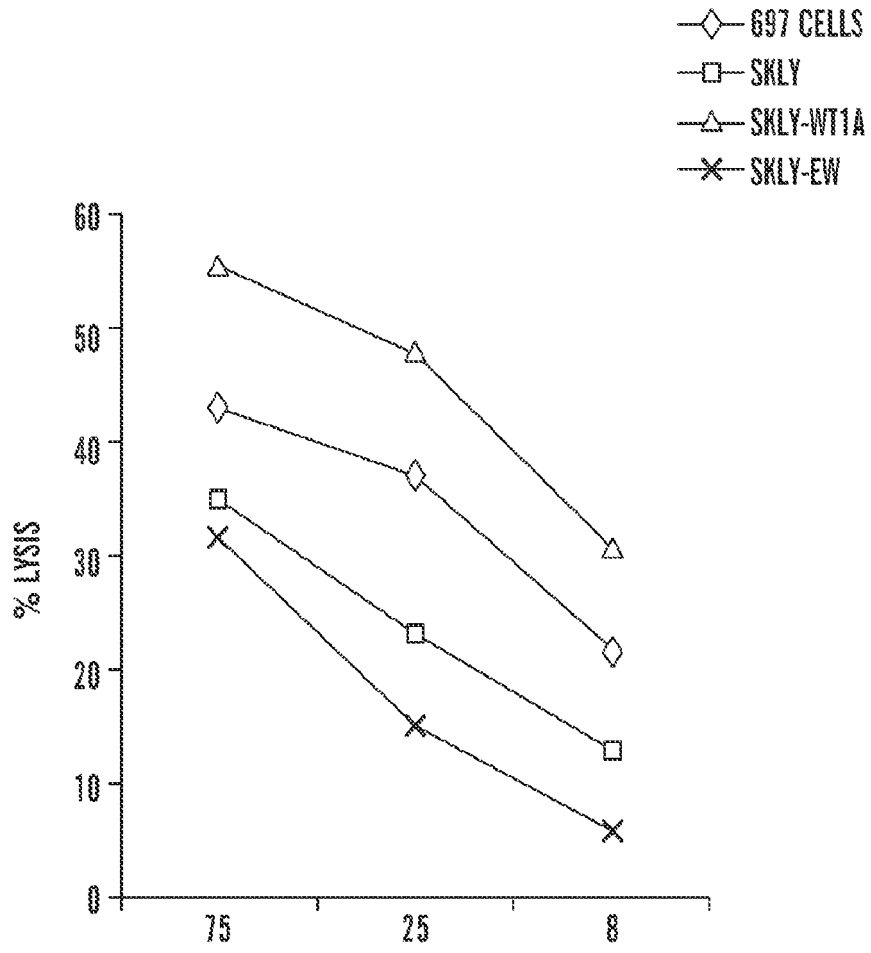


Figure 2

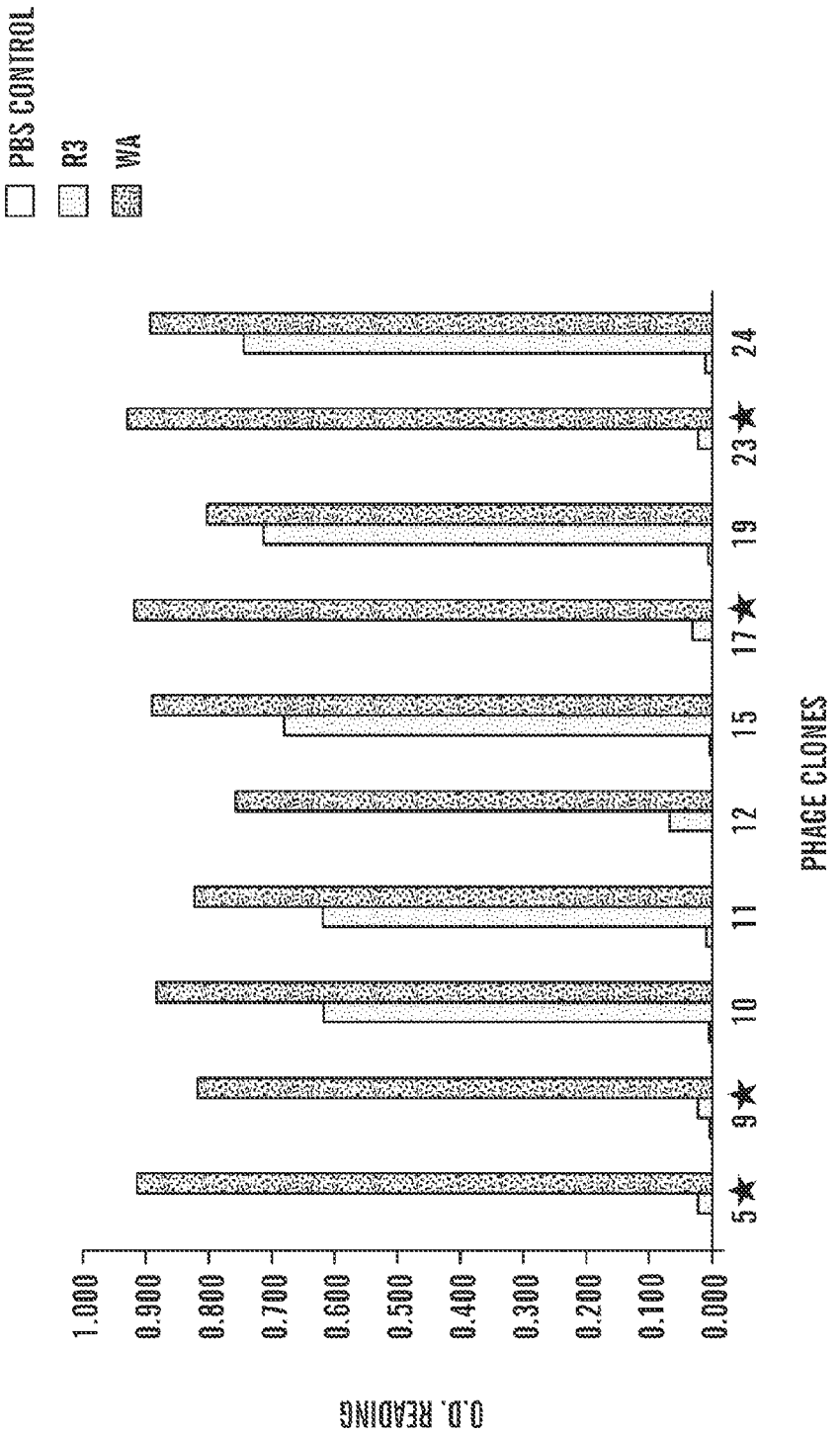

PBS CONTROL
R3
WA
O.D. READING
1.000
0.900
0.800
0.700
0.600
0.500
0.400
0.300
0.200
0.100
0.000
5★
9★
10
11
12
15
17★
19
23★
24
PHAGE CLONES

Figure 3

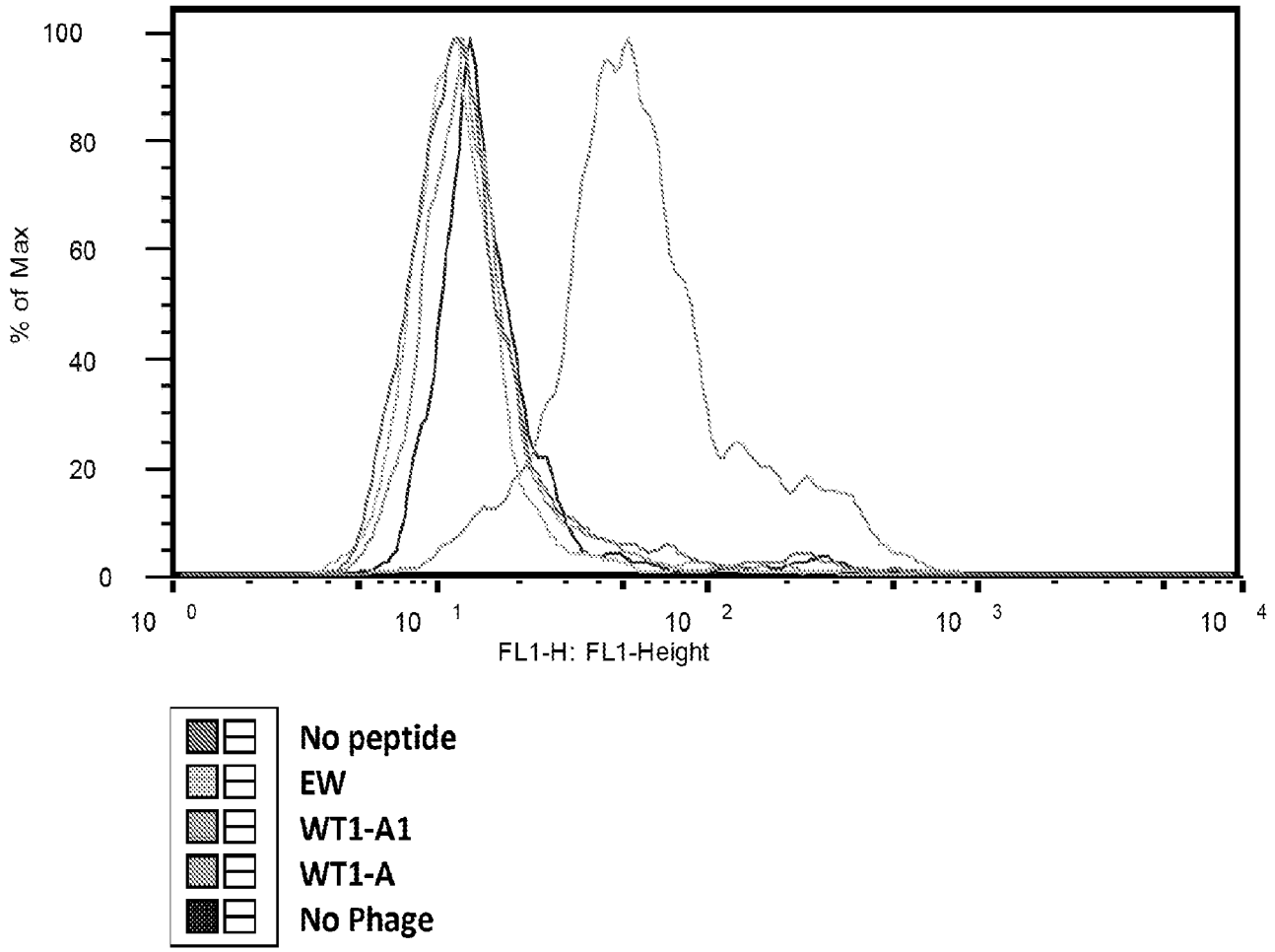
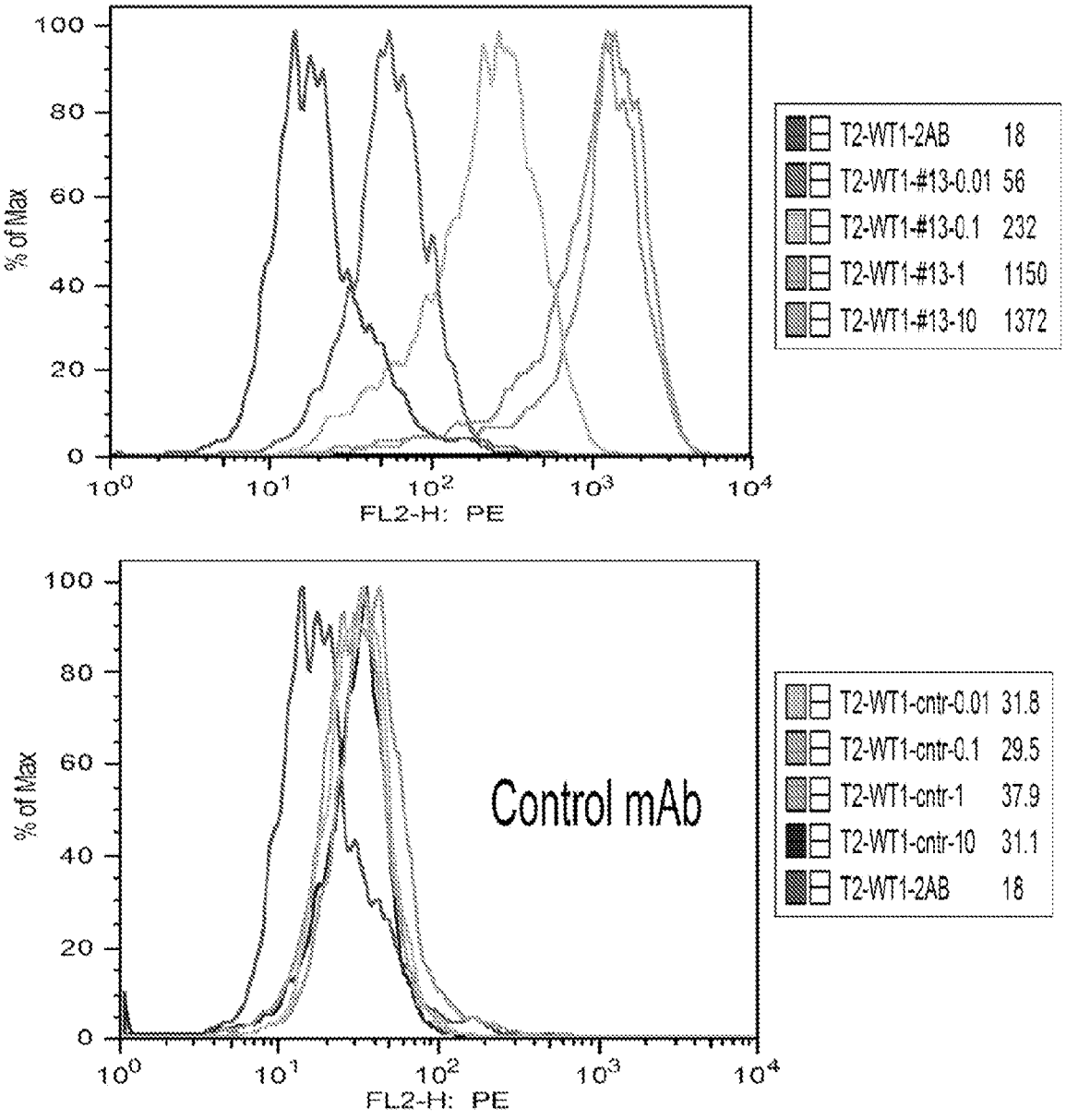

100
80
60
40
20
0
% of Max
10 0
10 1
10 2
10 3
10 4
FL1-H: FL1-Height
No peptide
EW
WT1-A1
WT1-A
No Phage

Figure 4



Flow cytometric titration of mAb #13 on T2 cells pulsed w/ WT1 peptide

Figure 5

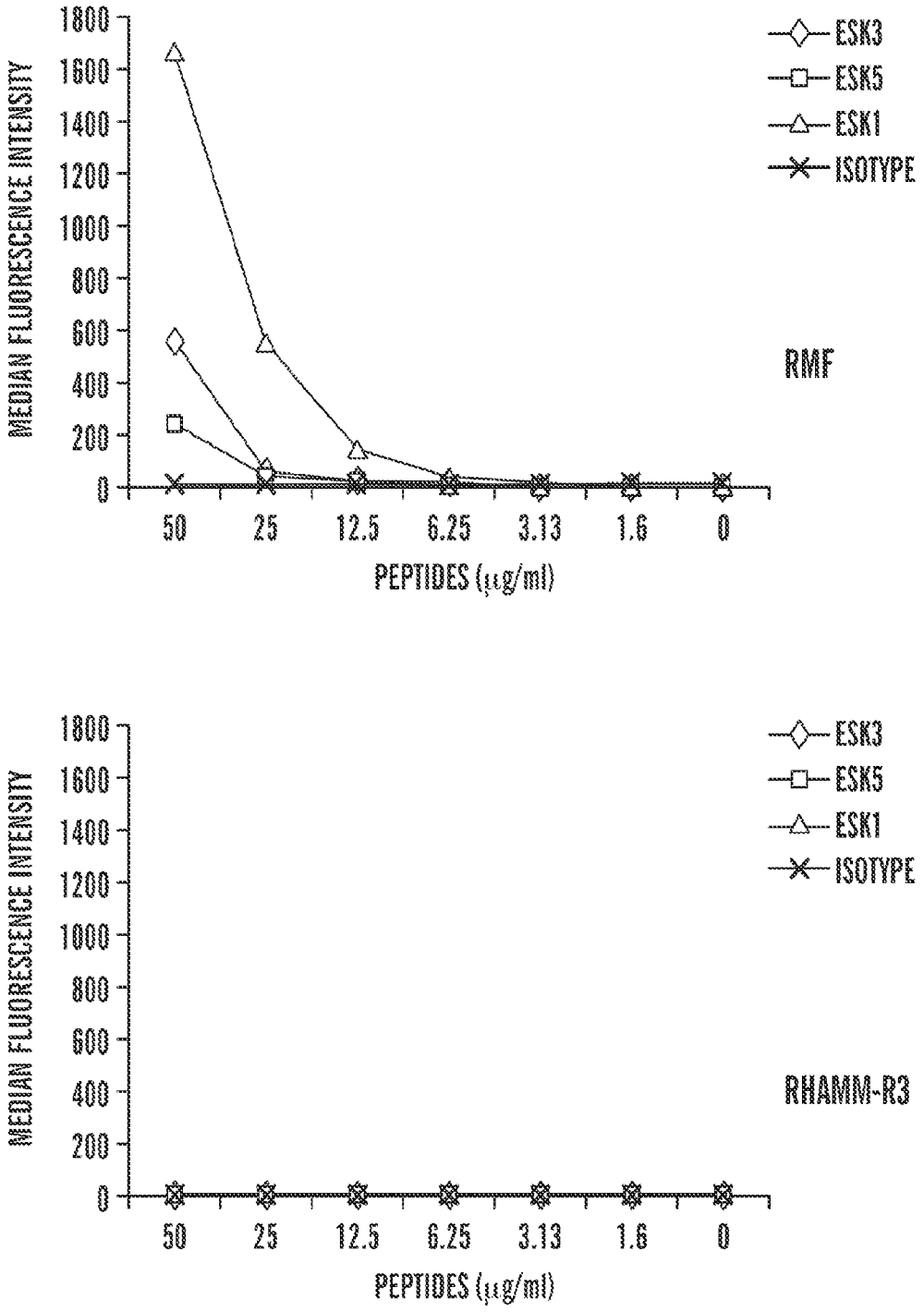

MEDIAN FLUORESCENCE INTENSITY
1800
1600
1400
1200
1000
800
600
400
200
0
50
25
12.5
6.25
3.13
1.6
0
PEPTIDES (μg/ml)
ESK3
ESK5
ESK1
ISOTYPE
RMF
MEDIAN FLUORESCENCE INTENSITY
1800
1600
1400
1200
1000
800
600
400
200
0
50
25
12.5
6.25
3.13
1.6
0
PEPTIDES (μg/ml)
ESK3
ESK5
ESK1
ISOTYPE
RHAMM-R3

Figure 6

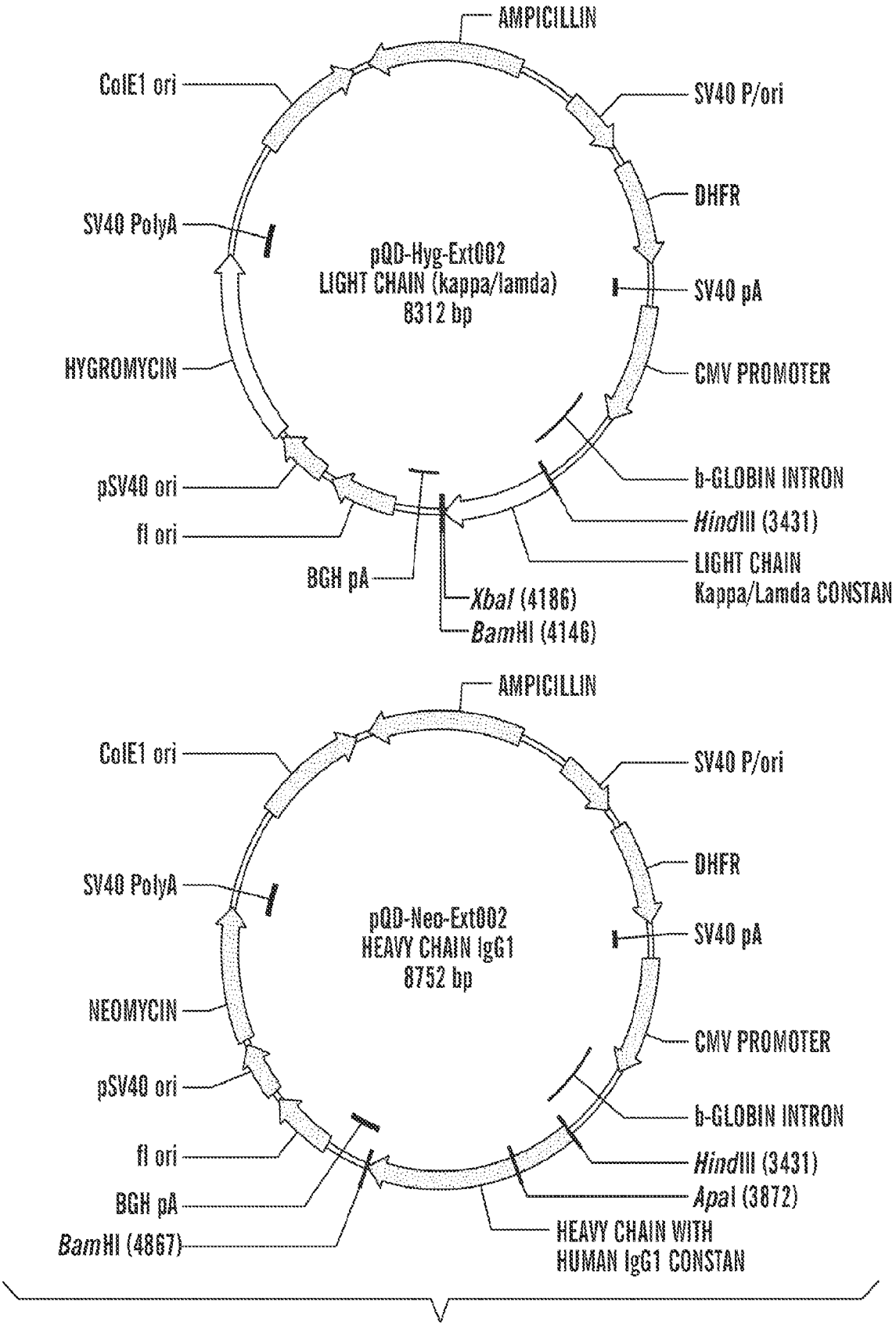

AMPICILLIN
ColE1 ori
SV40 P/ori
DHFR
SV40 PolyA
pQD-Hyg-Ext002
LIGHT CHAIN (kappa/lamda)
8312 bp
SV40 pA
HYGROMYCIN
CMV PROMOTER
b-GLOBIN INTRON
pSV40 ori
HindIII (3431)
f1 ori
LIGHT CHAIN
Kappa/Lamda CONSTAN
BGH pA
XbaI (4186)
BamHI (4146)
AMPICILLIN
ColE1 ori
SV40 P/ori
DHFR
SV40 PolyA
pQD-Neo-Ext002
HEAVY CHAIN IgG1
8752 bp
SV40 pA
NEOMYCIN
CMV PROMOTER
pSV40 ori
b-GLOBIN INTRON
f1 ori
HindIII (3431)
BGH pA
ApaI (3872)
BamHI (4867)
HEAVY CHAIN WITH
HUMAN IgG1 CONSTAN

Figure 7

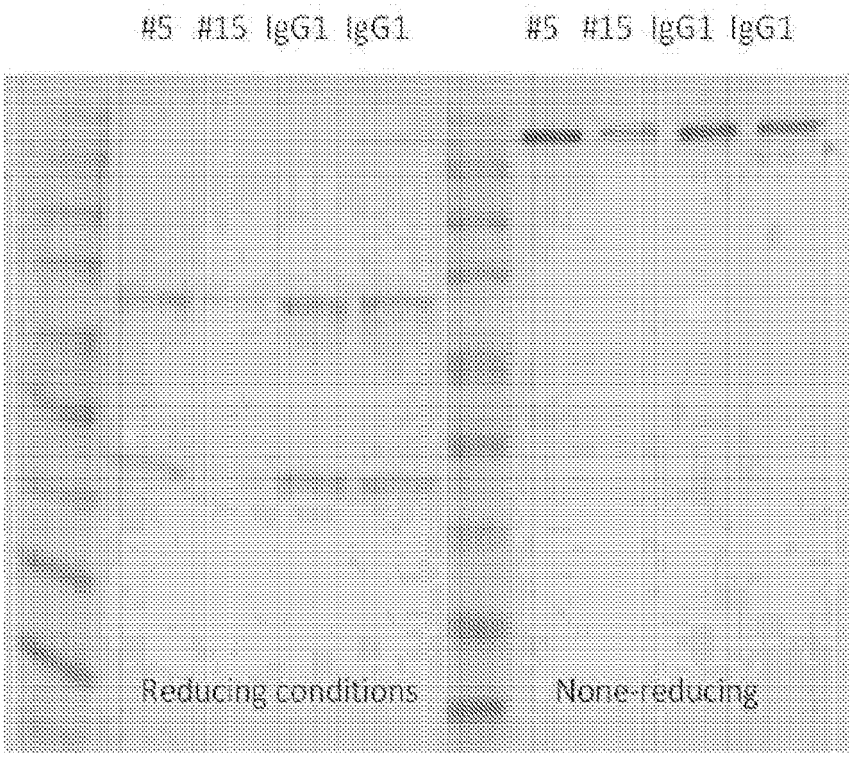

#5 #15 IgG1 IgG1
#5 #15 IgG1 IgG1
Reducing conditions
None-reducing

Figure 8

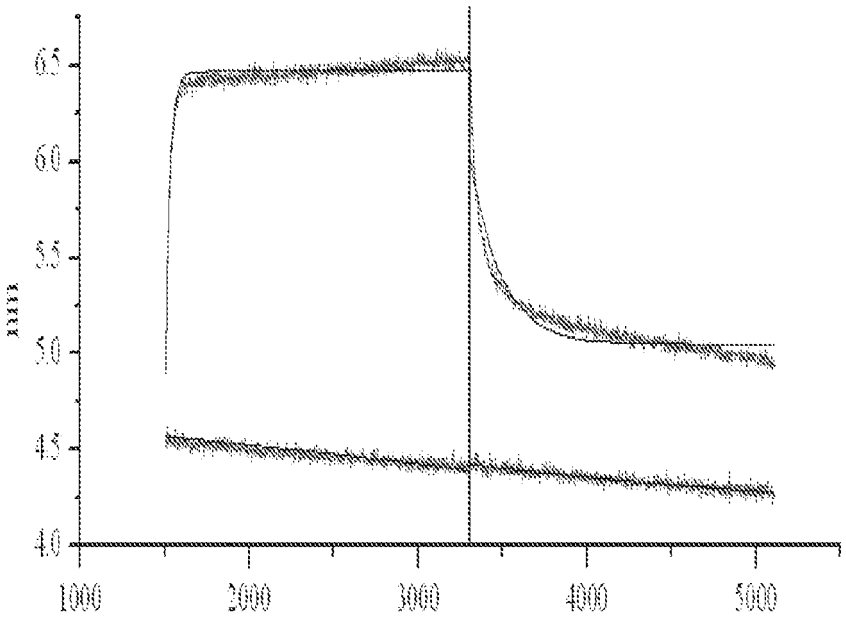
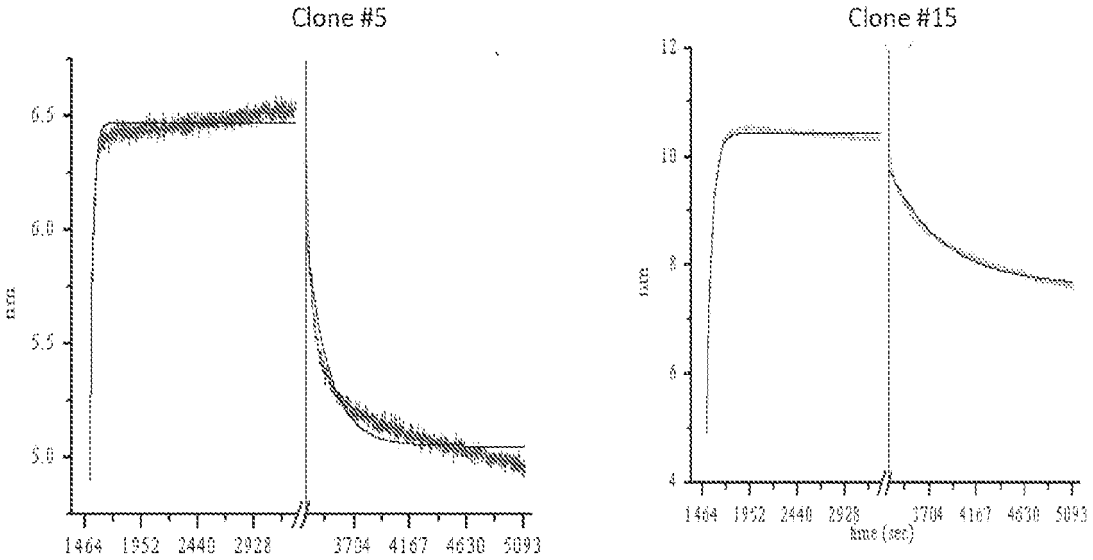


Figure 9



Samples	k_d [1/s]	Error in k_d	k_a [1/Ms]	K_D [M]
EXT002- Clone #5 IgG1	5.48E-3	1.12E-4	4.68E5	1.17E-8
EXT002- Clone #15 IgG1	1.88E-3	2.25E-5	2.45E5	7.68E-9

Figure 10

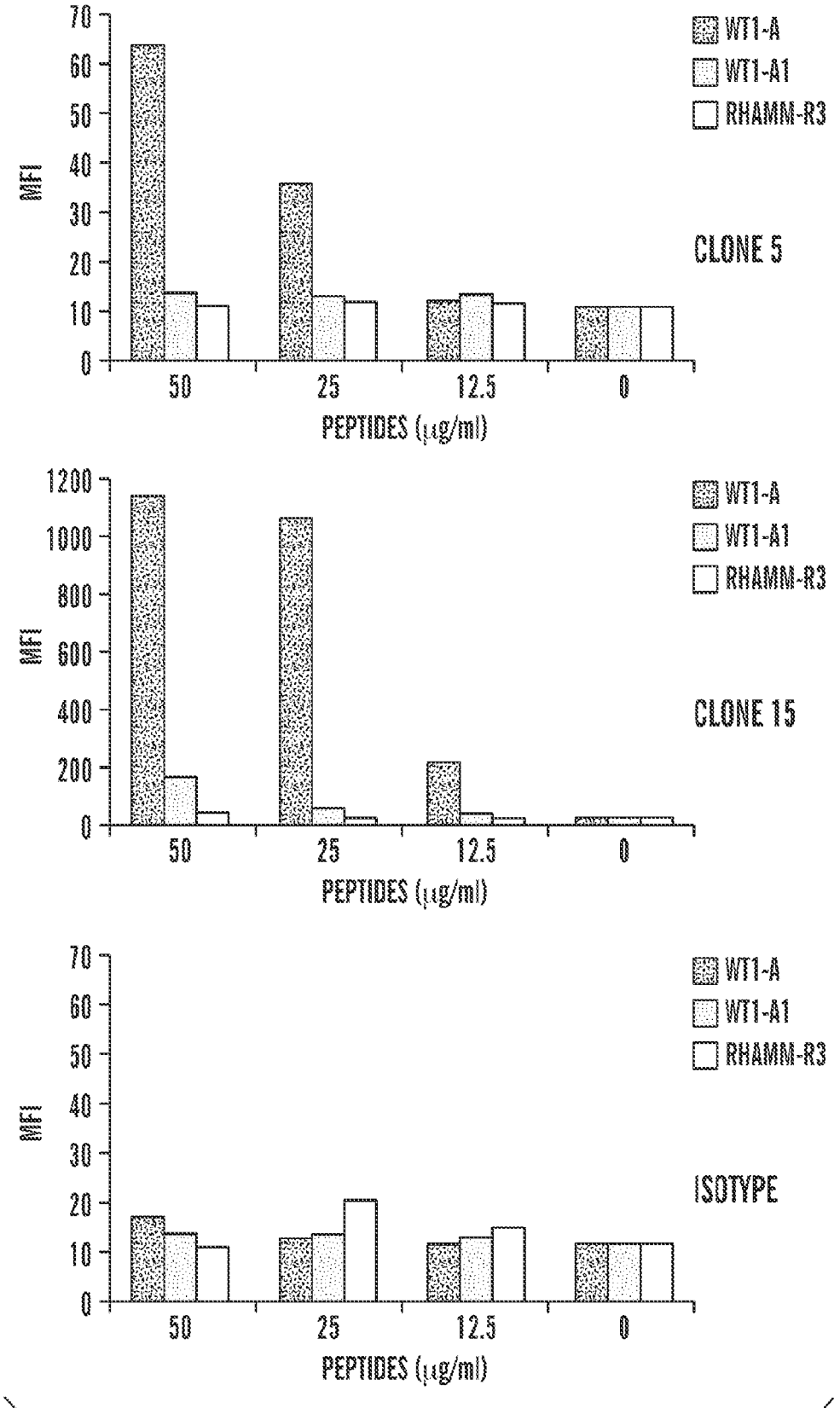

MFI
70
60
50
40
30
20
10
0
50
25
12.5
0
PEPTIDES (µg/ml)
WT1-A
WT1-A1
RHAMN-R3
CLONE 5
MFI
1200
1000
800
600
400
200
0
50
25
12.5
0
PEPTIDES (µg/ml)
WT1-A
WT1-A1
RHAMN-R3
CLONE 15
MFI
70
60
50
40
30
20
10
0
50
25
12.5
0
PEPTIDES (µg/ml)
WT1-A
WT1-A1
RHAMN-R3
ISOTYPE

Figure 11

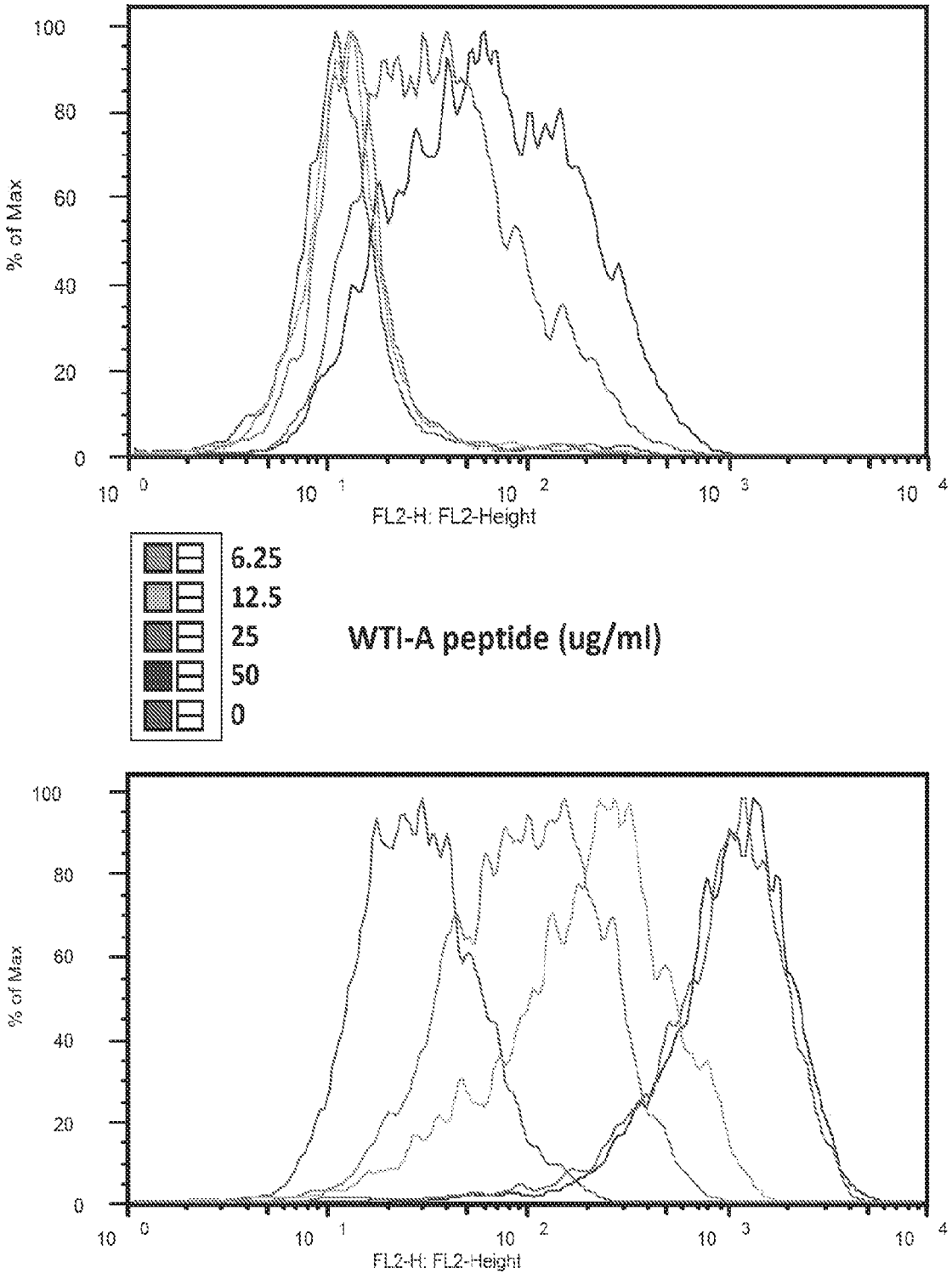

100
80
60
40
20
0
% of Max
10 0
10 1
10 2
10 3
10 4
FL2-H: FL2-Height
6.25
12.5
25
50
0
WTI-A peptide (ug/ml)
100
80
60
40
20
0
% of Max
10 0
10 1
10 2
10 3
10 4
FL2-H: FL2-Height

Figure 12

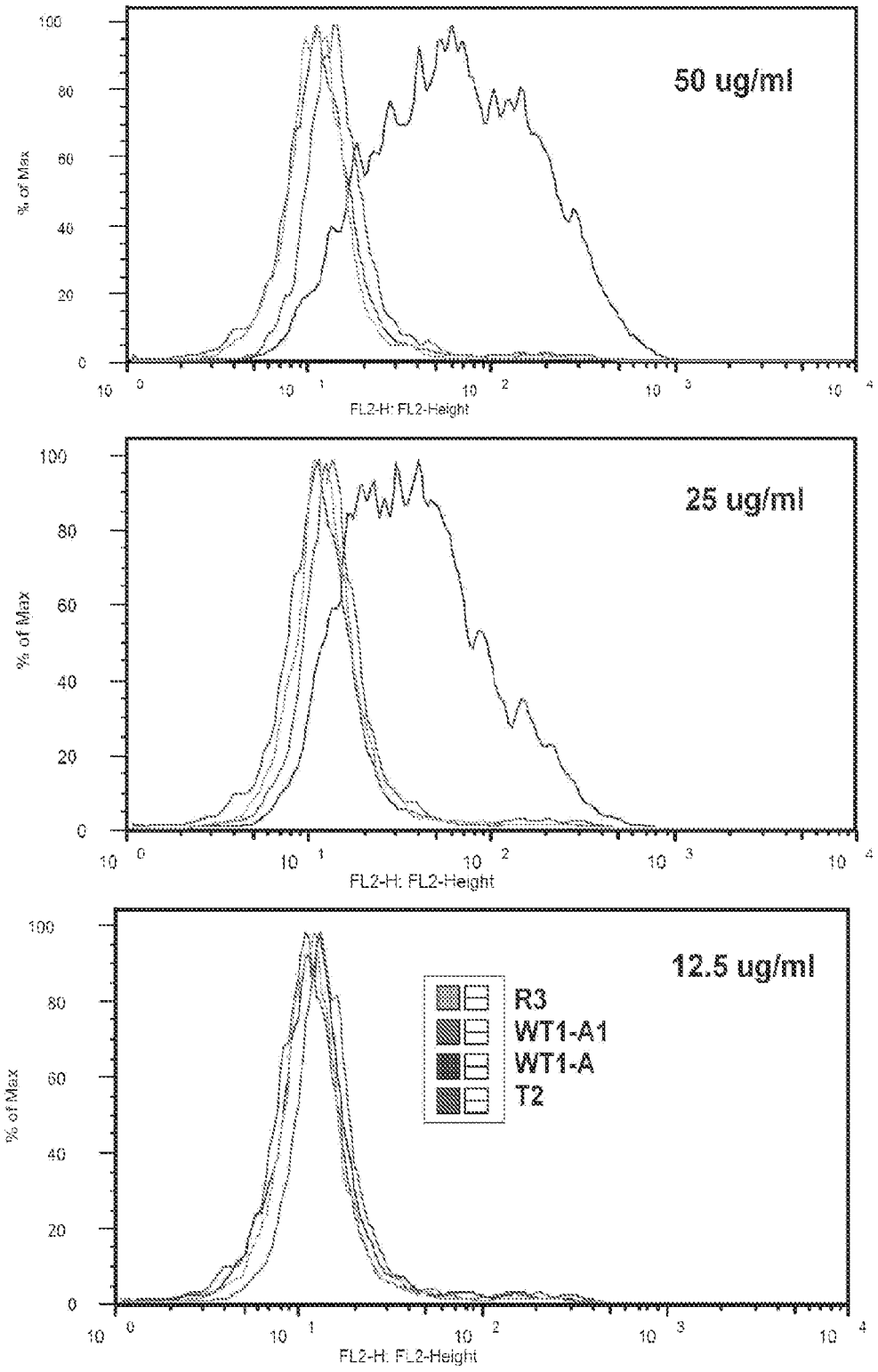
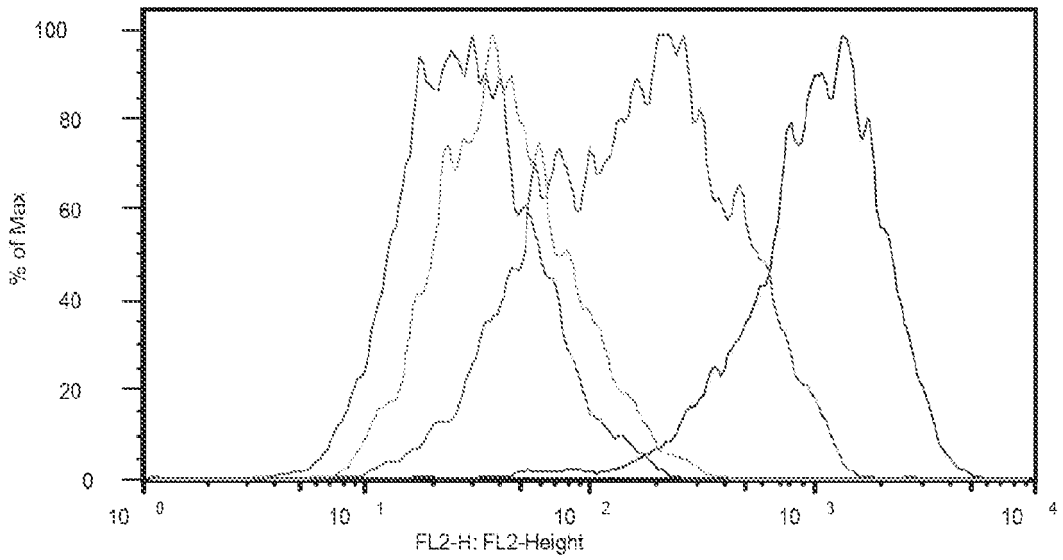
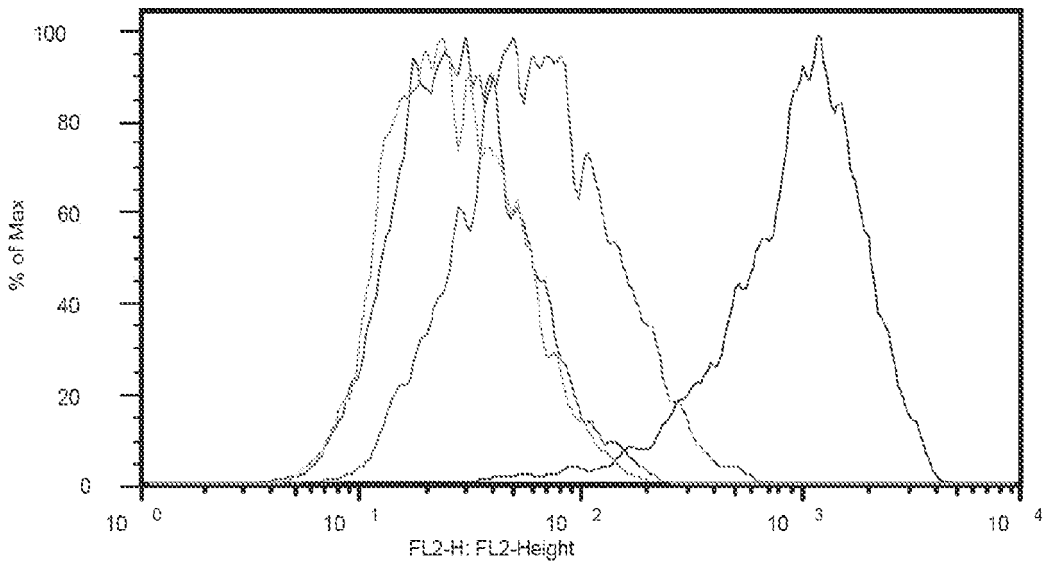

50 ug/ml
25 ug/ml
12.5 ug/ml
% of Max
FL2-H: FL2-Height
R3
WT1-A1
WT1-A
T2

Figure 13



50 ug/ml



25 ug/ml

Figure 14

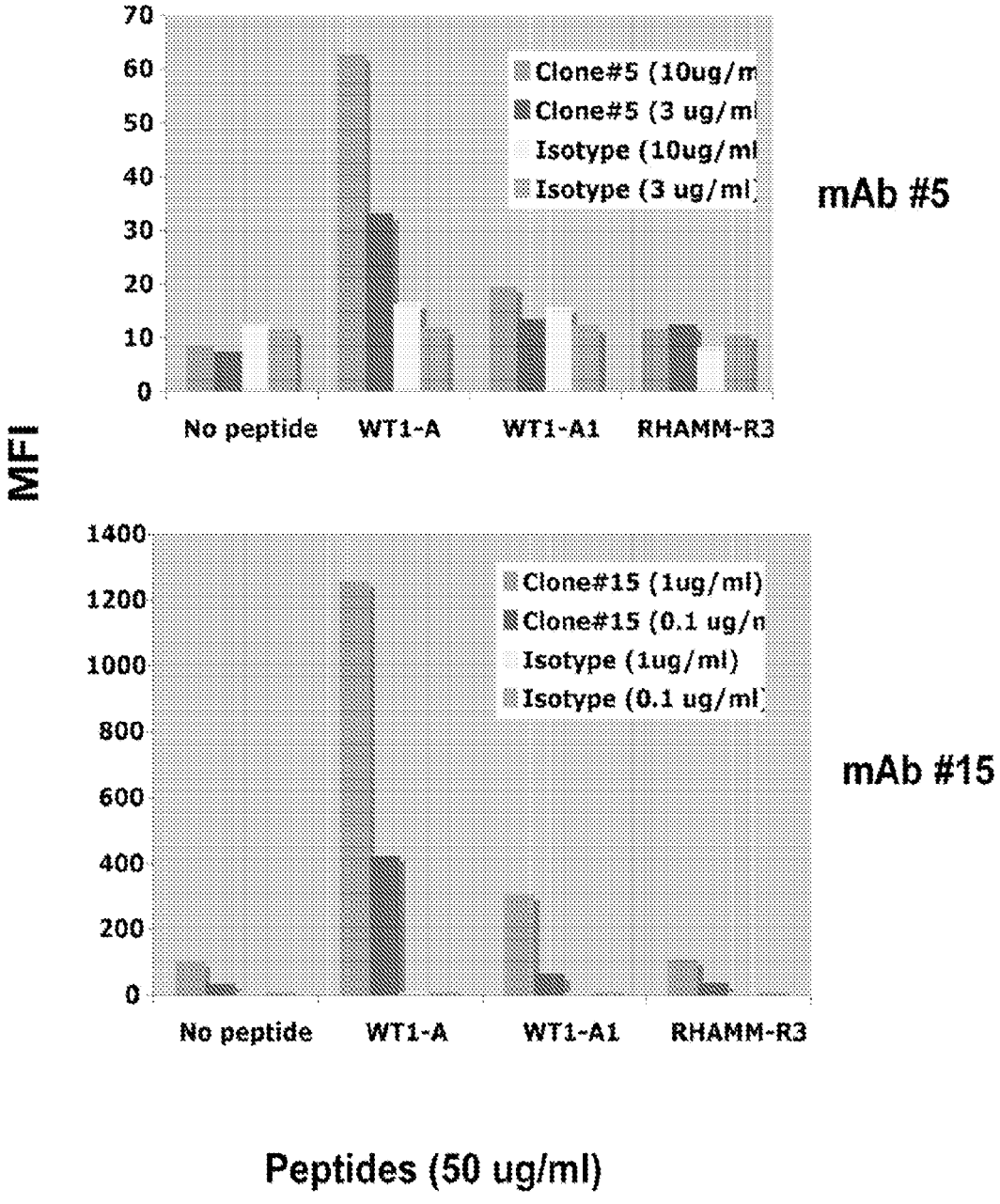

MFI
70
60
50
40
30
20
10
0
Clone#5 (10ug/m
Clone#5 (3 ug/m
Isotype (10ug/ml
Isotype (3 ug/ml
No peptide
WT1-A
WT1-A1
RHAMM-R3
mAb #5
1400
1200
1000
800
600
400
200
0
Clone#15 (1ug/ml)
Clone#15 (0.1 ug/n
Isotype (1ug/ml)
Isotype (0.1 ug/ml
No peptide
WT1-A
WT1-A1
RHAMM-R3
mAb #15
Peptides (50 ug/ml)

Figure 15

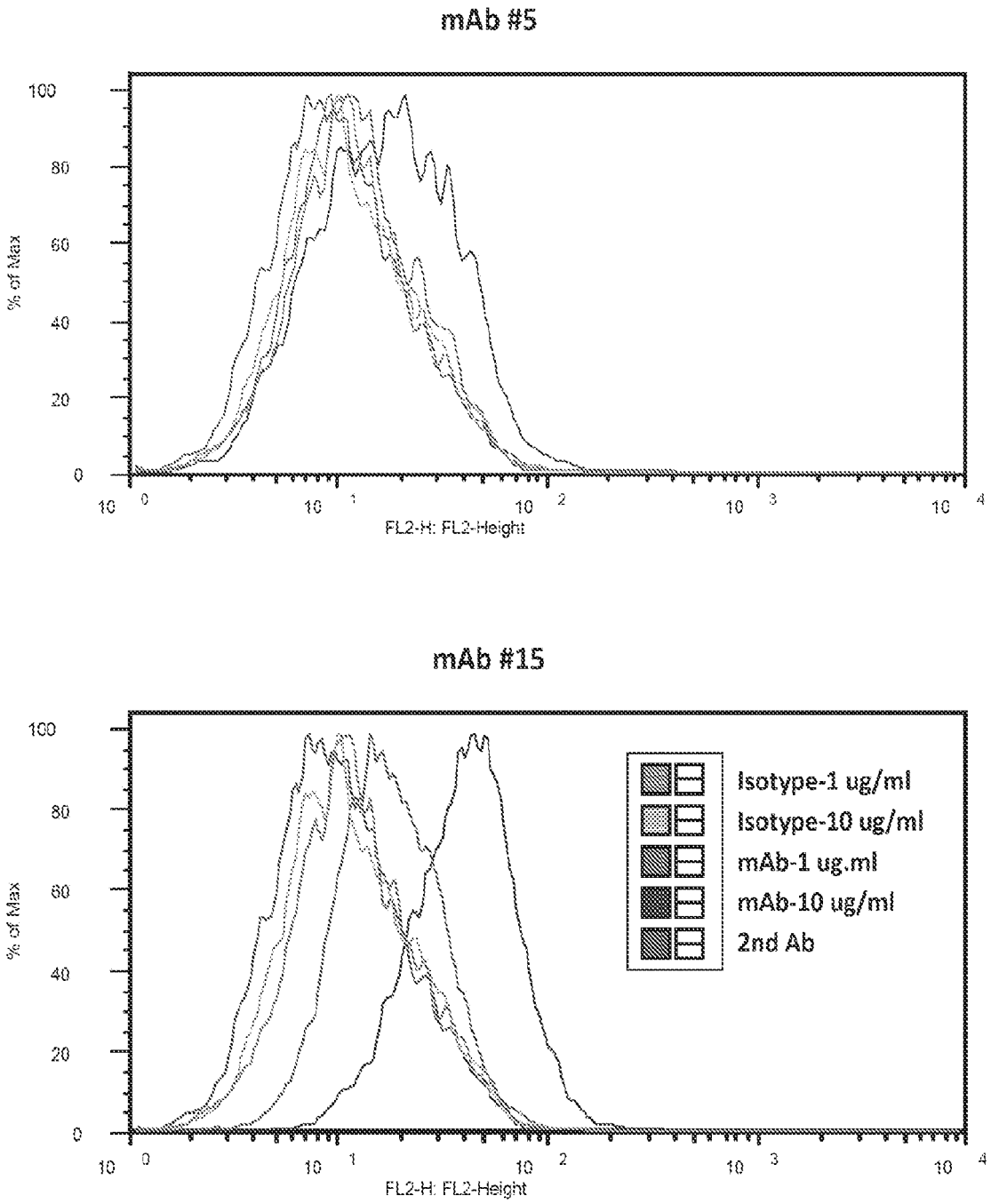

mAb #5
100
80
60
40
20
0
% of Max
10 0 10 1 10 2 10 3 10 4
FL2-H: FL2-Height
mAb #15
100
80
60
40
20
0
% of Max
10 0 10 1 10 2 10 3 10 4
FL2-H: FL2-Height
Isotype-1 ug/ml
Isotype-10 ug/ml
mAb-1 ug.ml
mAb-10 ug/ml
2nd Ab

Figure 16

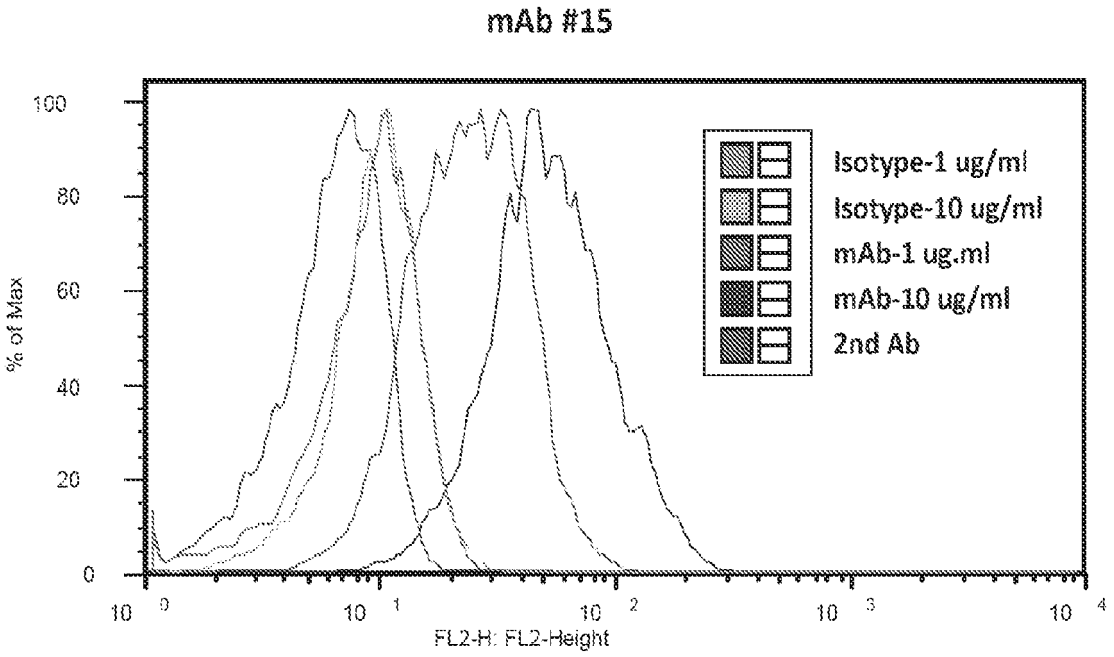

mAb #15
100
80
60
40
20
0
% of Max
10 0
10 1
10 2
10 3
10 4
FL2-H: FL2-Height
Isotype-1 ug/ml
Isotype-10 ug/ml
mAb-1 ug.ml
mAb-10 ug/ml
2nd Ab

Figure 17

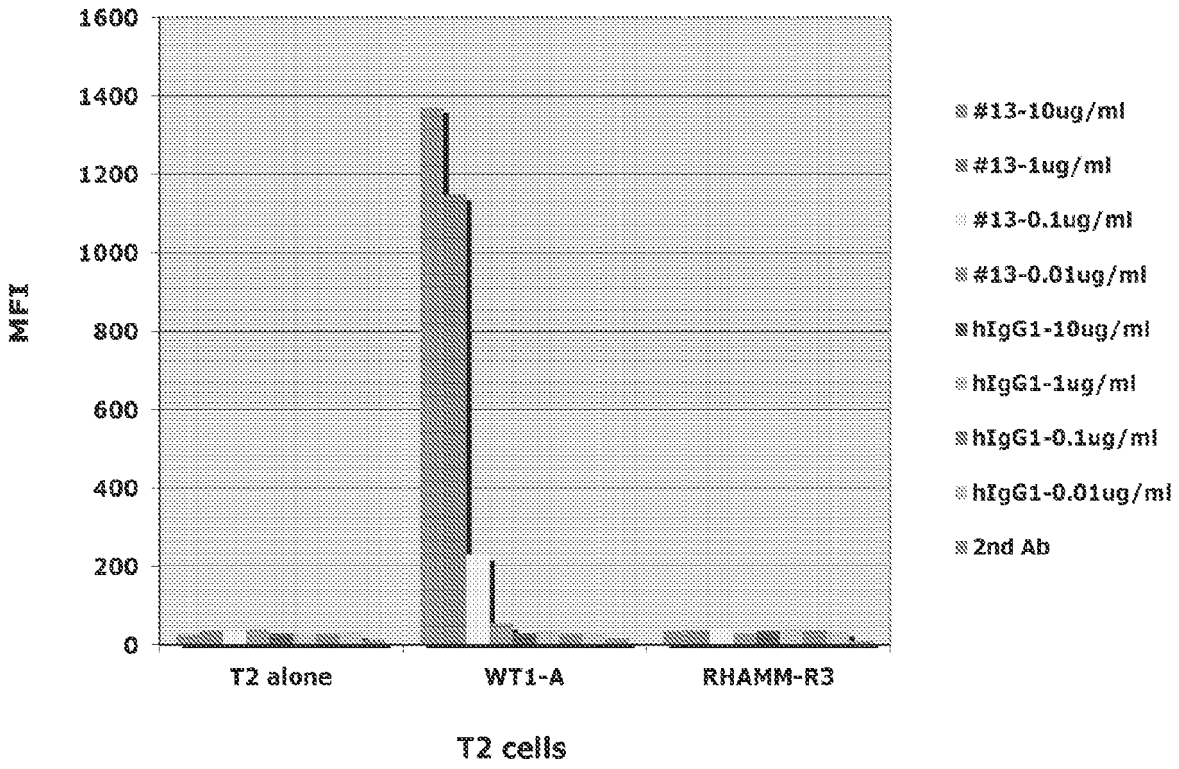

1600
1400
1200
1000
800
600
400
200
0
MFI
T2 alone
WT1-A
RHAMM-R3
T2 cells
#13-10ug/ml
#13-1ug/ml
#13-0.1ug/ml
#13-0.01ug/ml
hIgG1-10ug/ml
hIgG1-1ug/ml
hIgG1-0.1ug/ml
hIgG1-0.01ug/ml
2nd Ab

Figure 18

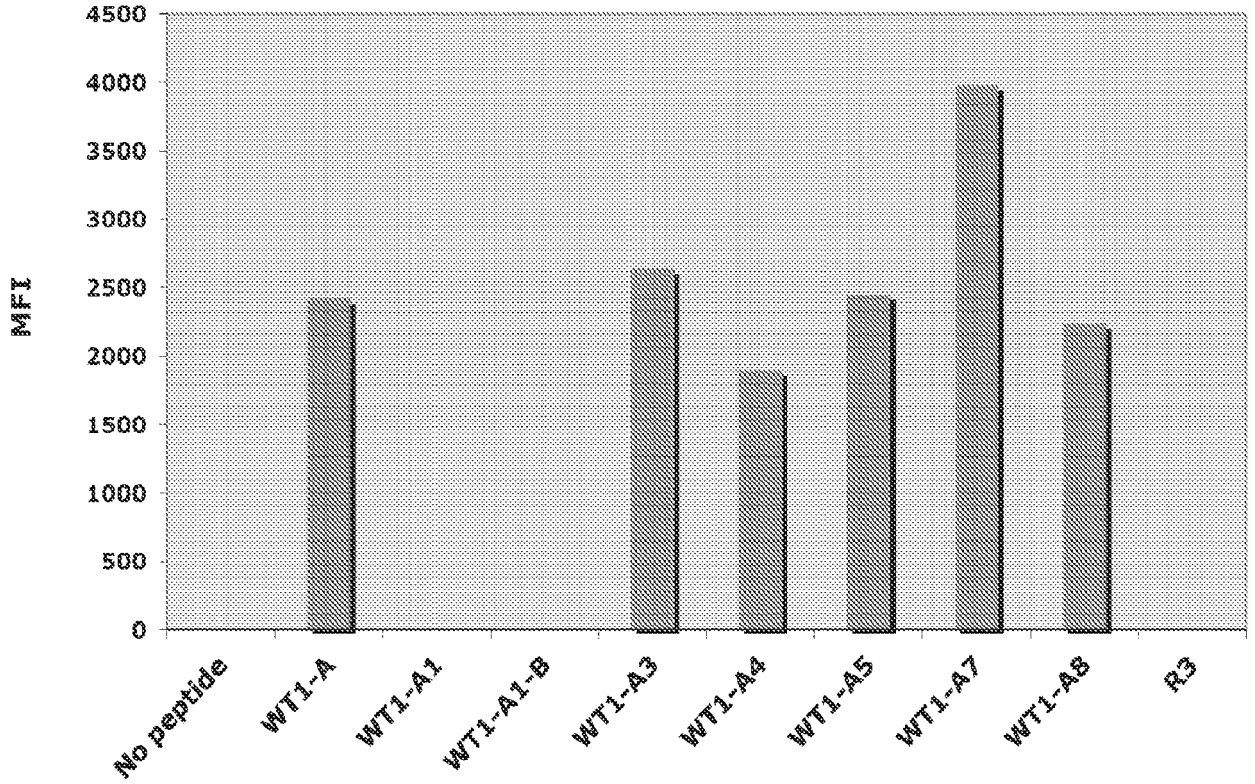

MFI
4500
4000
3500
3000
2500
2000
1500
1000
500
0
No peptide
WT1-A
WT1-A1
WT1-A1-B
WT1-A3
WT1-A4
WT1-A5
WT1-A7
WT1-A8
R3

Figure 19

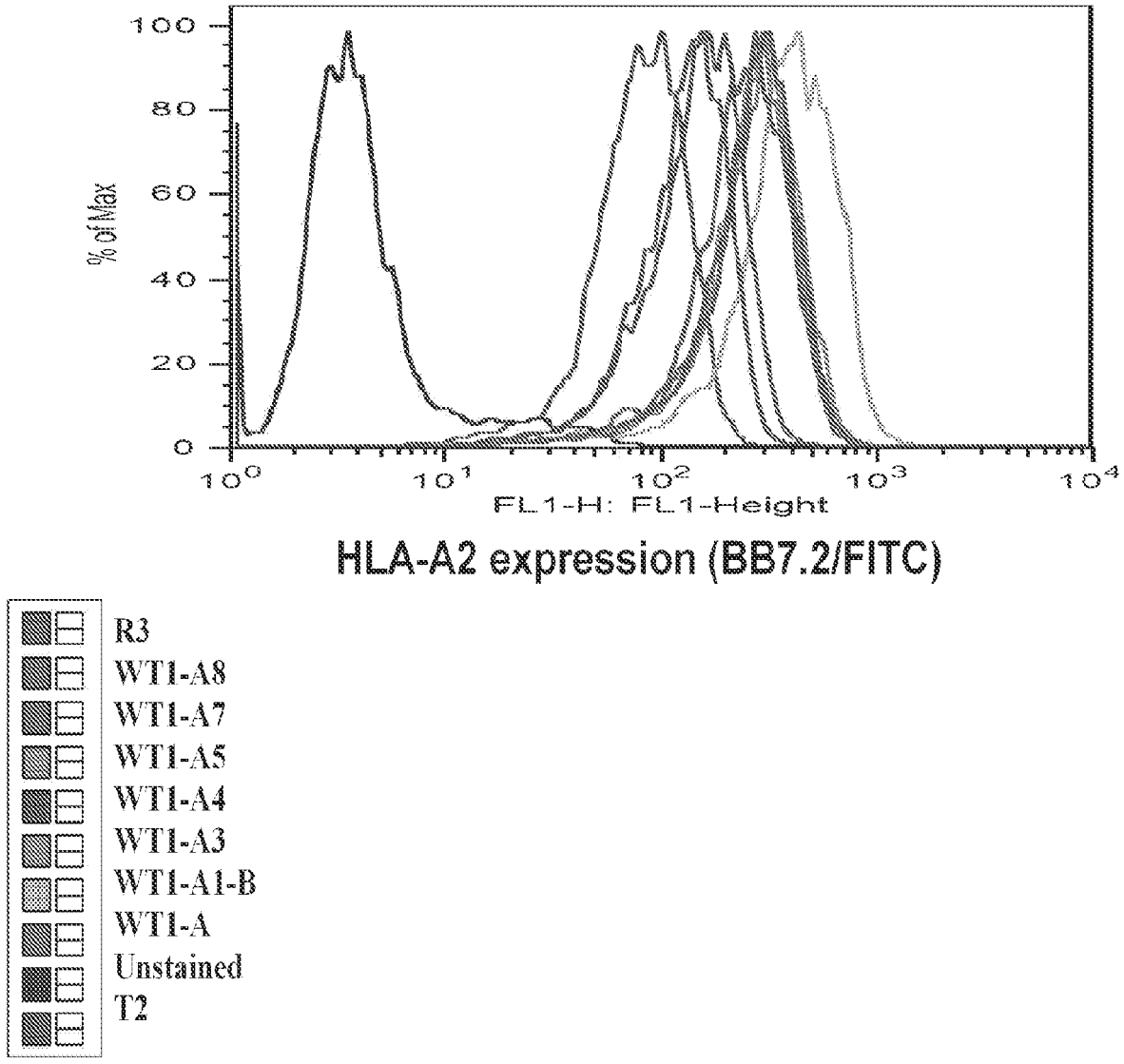

100
80
60
40
20
0
% of Max
10^0
10^1
10^2
10^3
10^4
FL1-H: FL1-Height
HLA-A2 expression (BB7.2/FITC)
R3
WT1-A8
WT1-A7
WT1-A5
WT1-A4
WT1-A3
WT1-A1-B
WT1-A
Unstained
T2

Figure 20

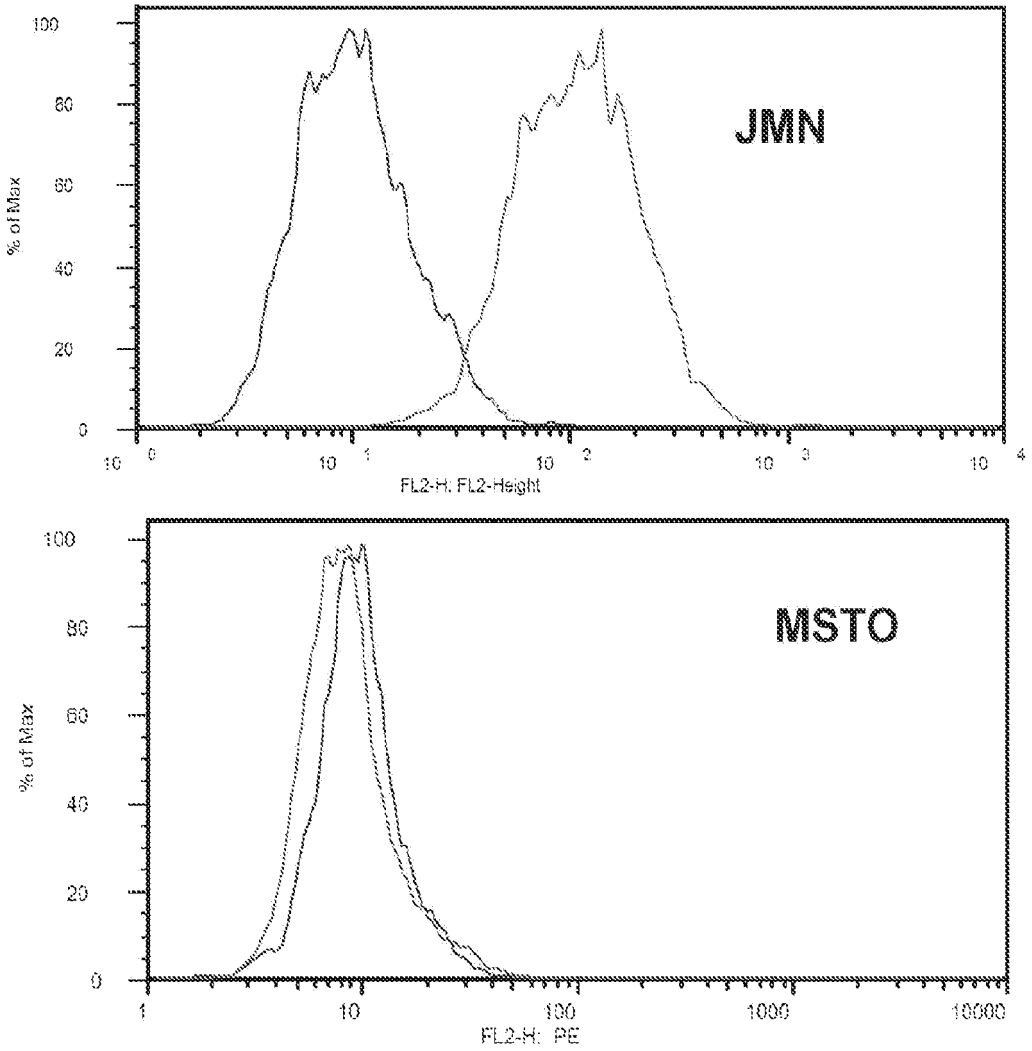


Figure 21

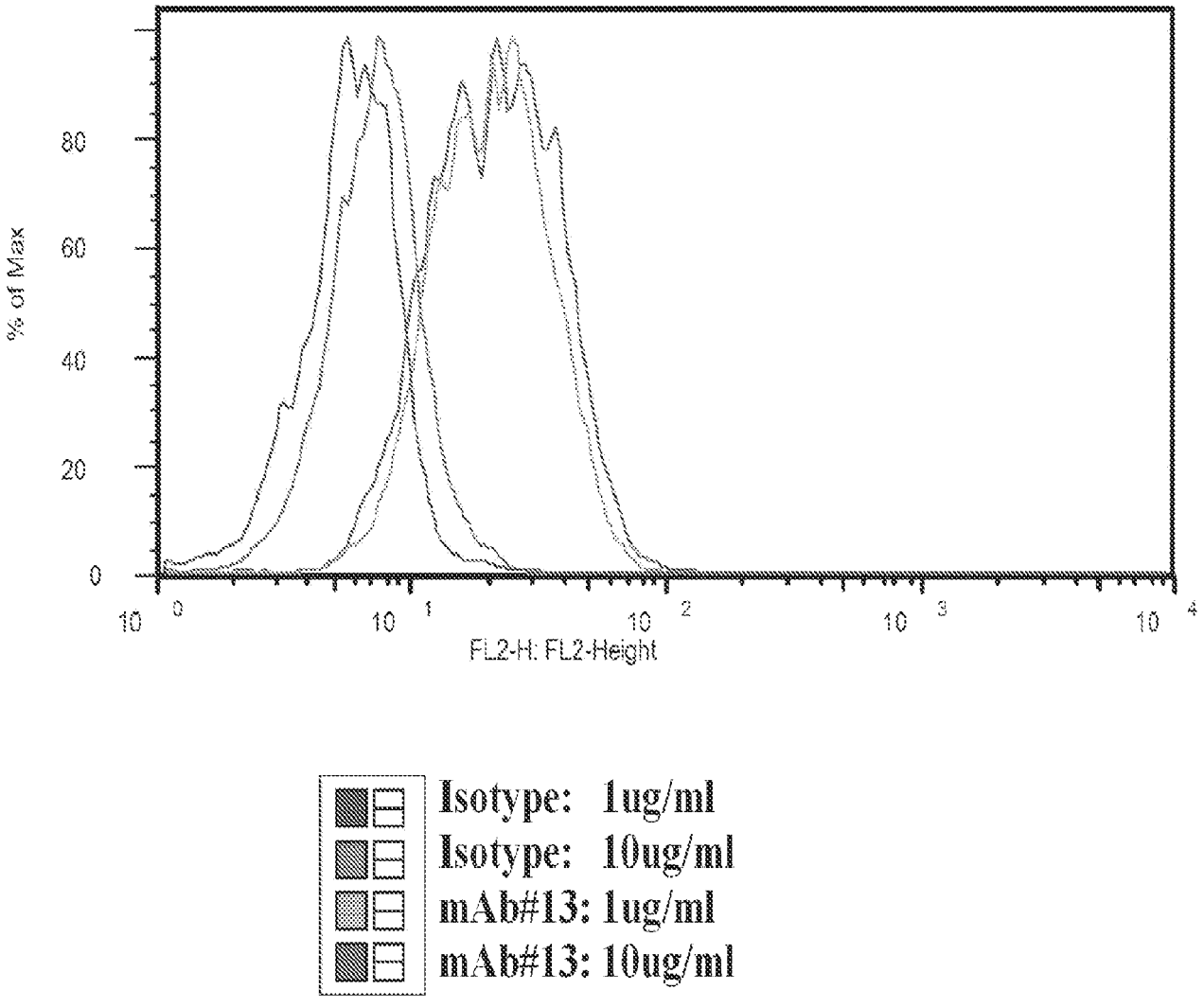

% of Max
80
60
40
20
0
10 0
10 1
10 2
10 3
10 4
FL2-H: FL2-Height
Isotype: 1ug/ml
Isotype: 10ug/ml
mAb#13: 1ug/ml
mAb#13: 10ug/ml

Figure 22

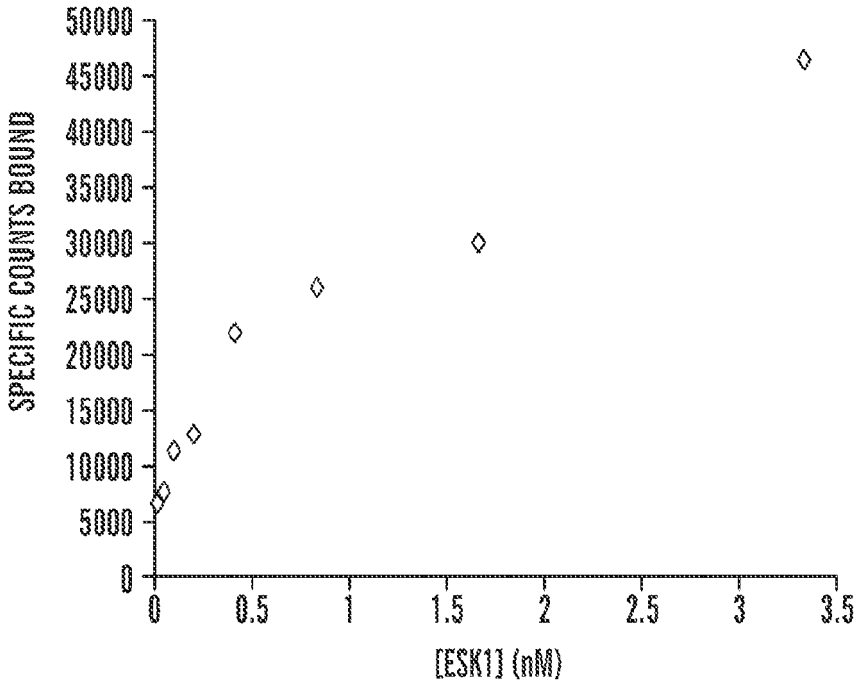
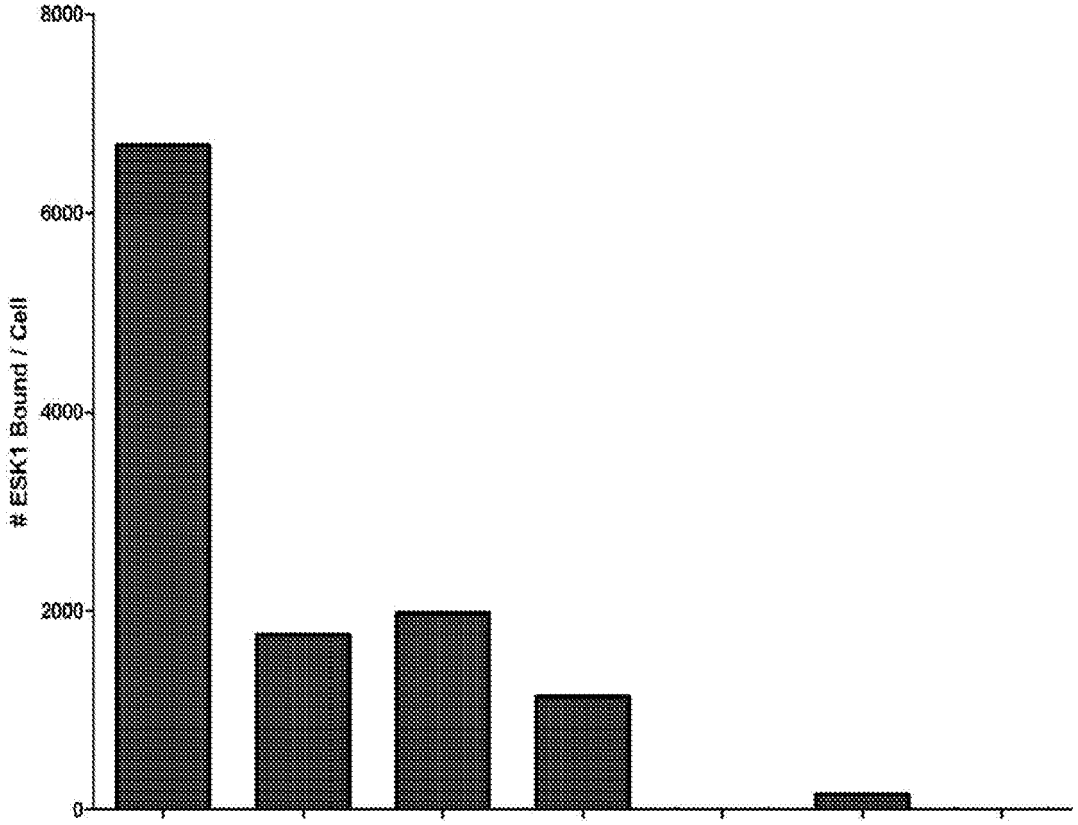

SPECIFIC COUNTS BOUND
50000
45000
40000
35000
30000
25000
20000
15000
10000
5000
0
0
0.5
1
1.5
2
2.5
3
3.5
[ESK1] (nM)

Figure 23



Cell	JMN	ALL-3	BA-25 (#64)	BV-173	697	SKLY-16	HL-60
WT1	+	+	+	+	+	?	+
A0201	+	+	+	+	+	+	-

Figure 24

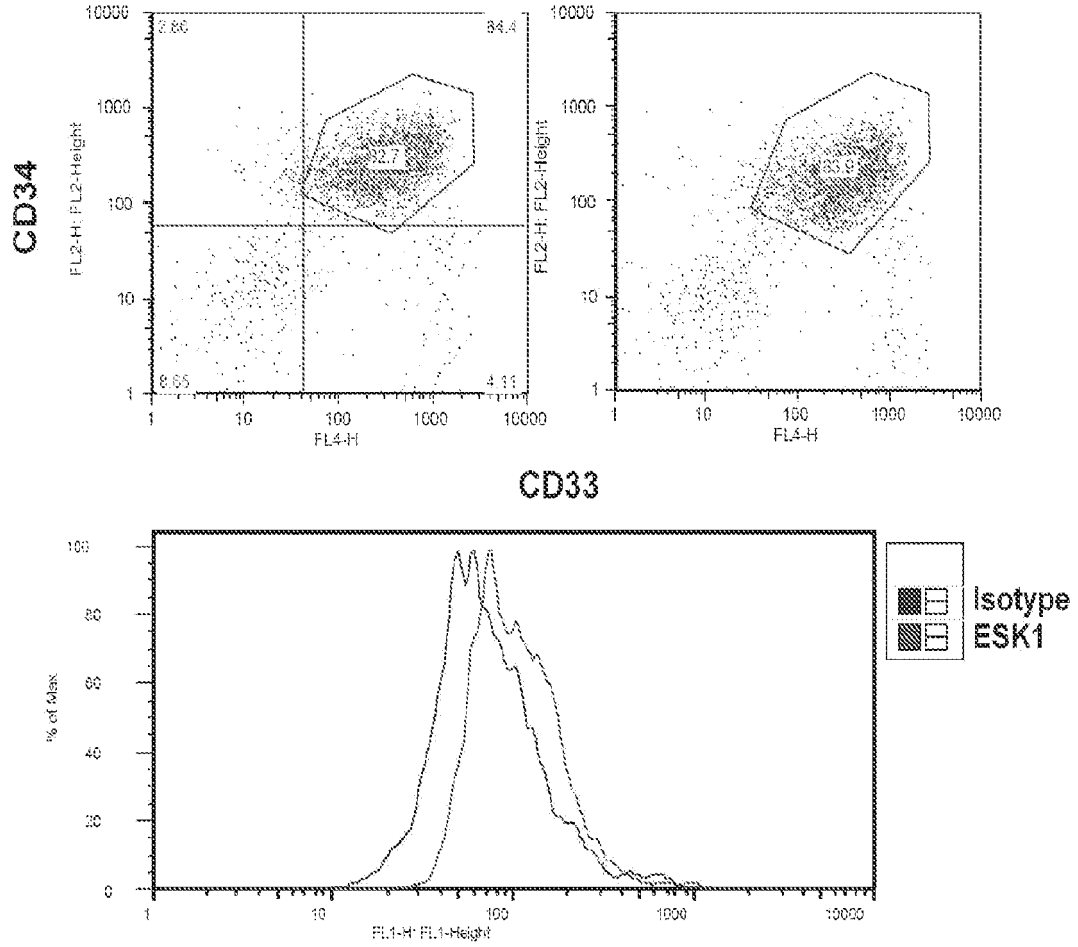

CD34
CD33
FL2-H: FL2-Height
FL4-H
% of Max
FL1-H: FL1-Height
Isotype
ESK1

Figure 25

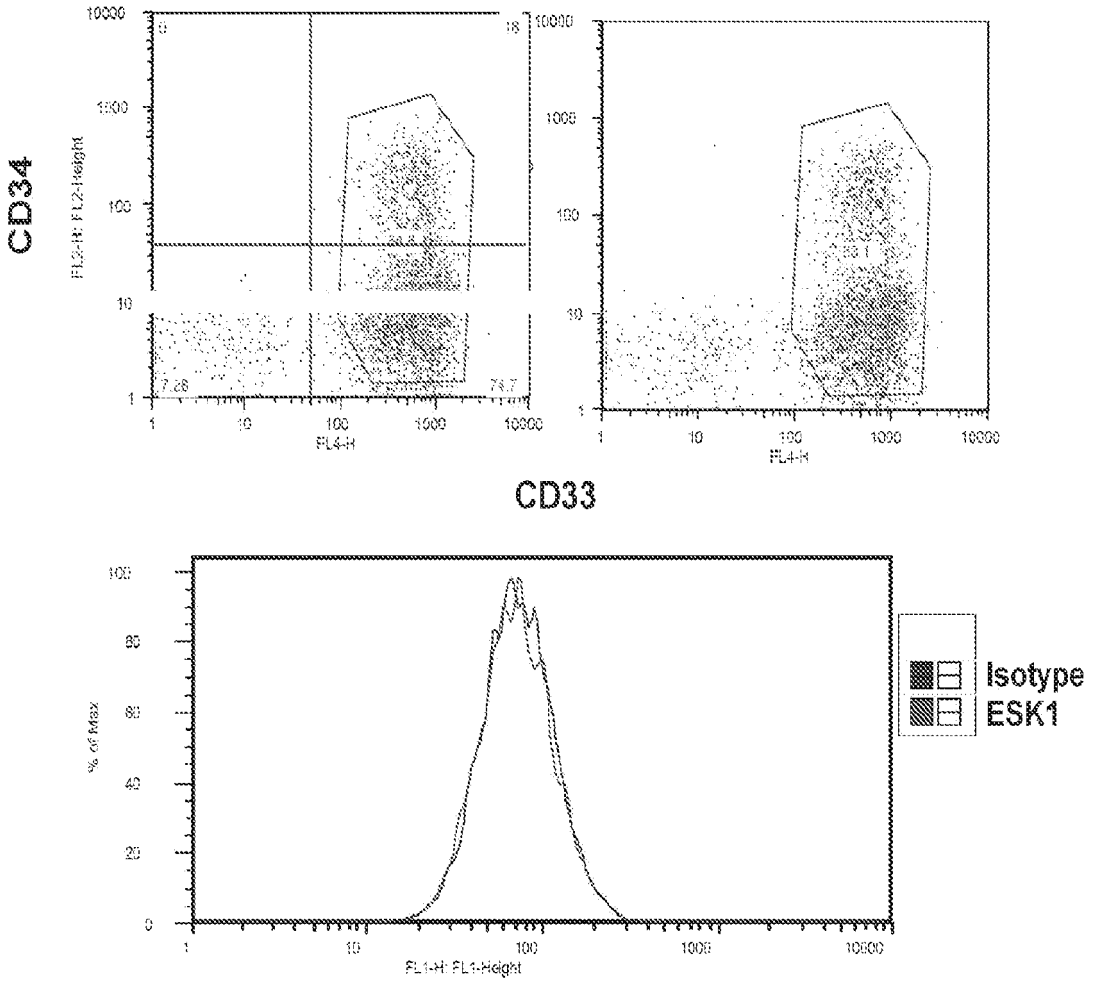


Figure 26

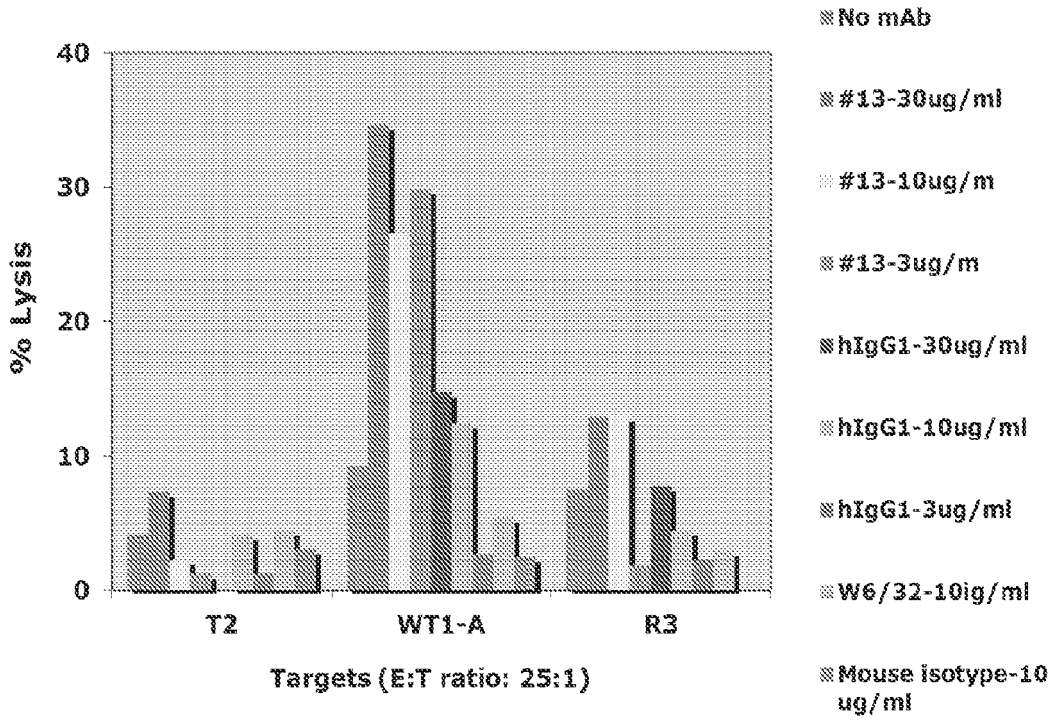

40
30
20
10
0
% Lysis
T2
WT1-A
R3
Targets (E:T ratio: 25:1)
No mAb
#13-30ug/ml
#13-10ug/m
#13-3ug/m
hIgG1-30ug/ml
hIgG1-10ug/ml
hIgG1-3ug/ml
W6/32-10ig/ml
Mouse isotype-10 ug/ml

Figure 27

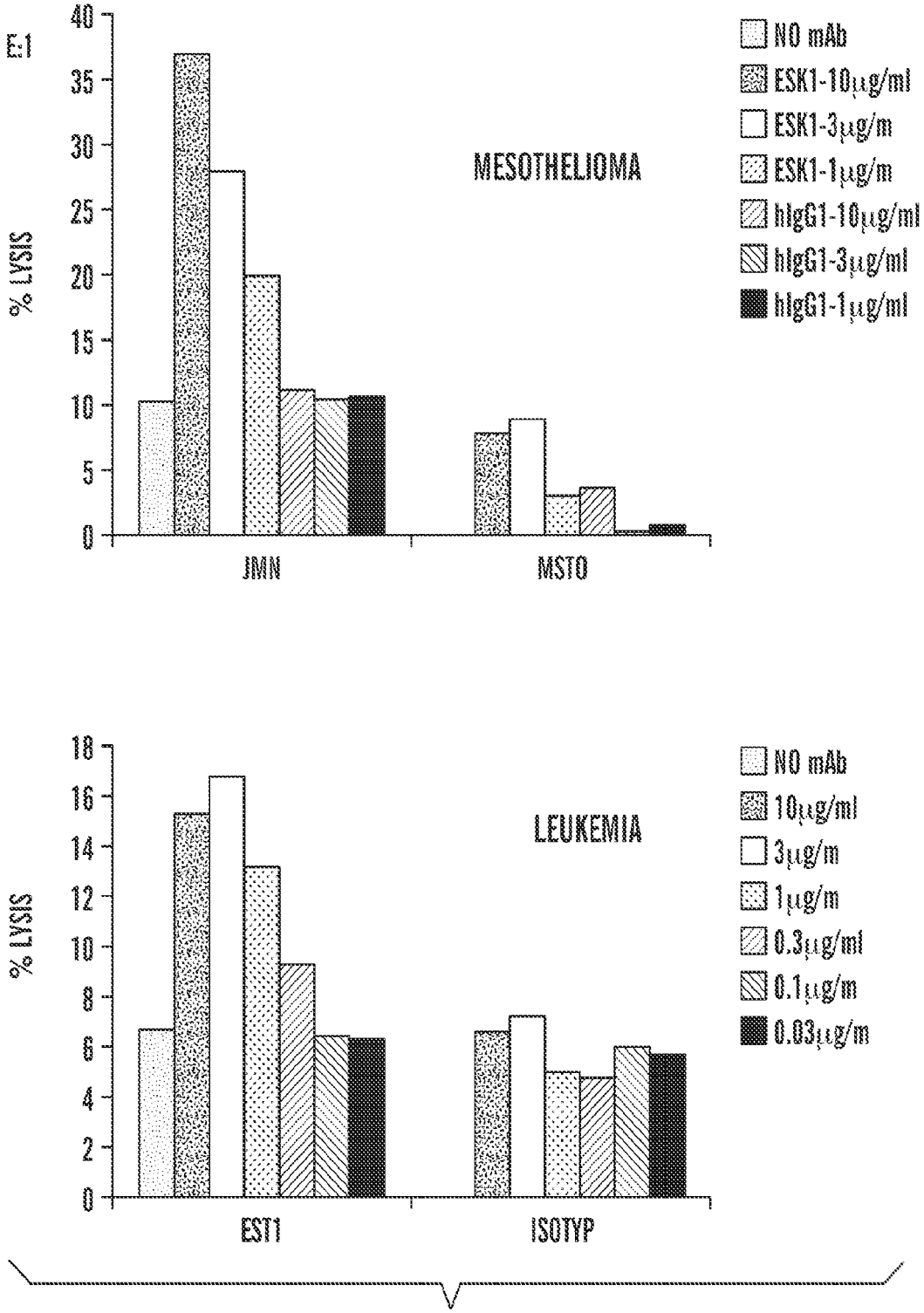
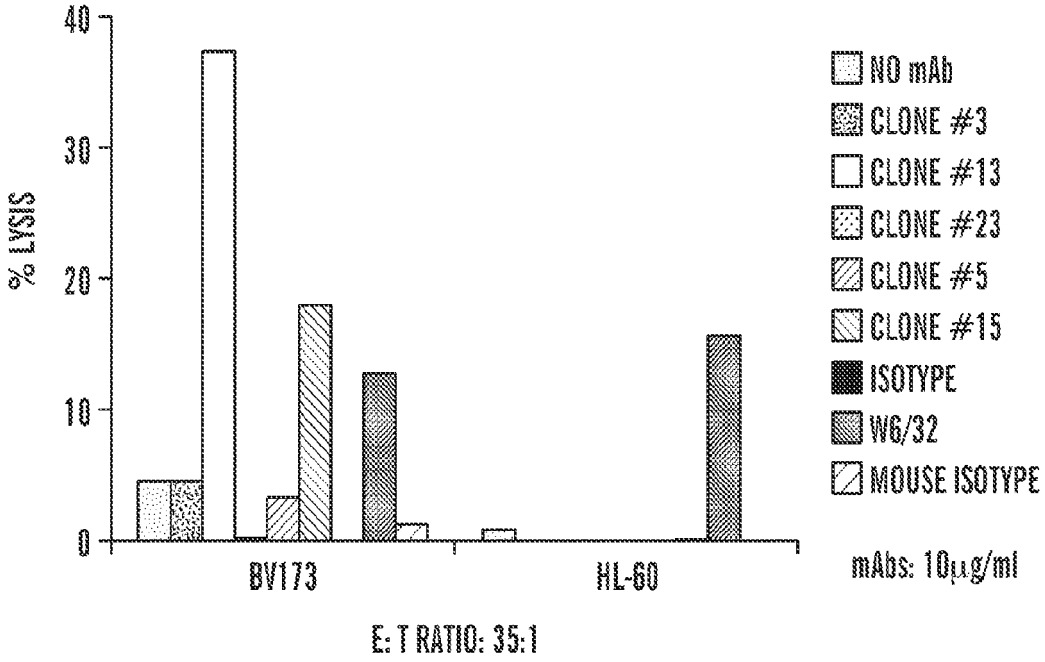

E:1
% LYSIS
40
35
30
25
20
15
10
5
0
MESOTHELIOMA
NO mAb
ESK1-10µg/ml
ESK1-3µg/m
ESK1-1µg/m
hIgG1-10µg/ml
hIgG1-3µg/ml
hIgG1-1µg/ml
JMN
MSTO
% LYSIS
18
16
14
12
10
8
6
4
2
0
LEUKEMIA
NO mAb
10µg/ml
3µg/m
1µg/m
0.3µg/ml
0.1µg/m
0.03µg/m
EST1
ISOTYP

Figure 28



	HLA-A2	WT1 mRNA	mAb BINDING
BV173	(+)	(+)	13, 15, 23
HL-60	(-)	(+)	(-)

Figure 29

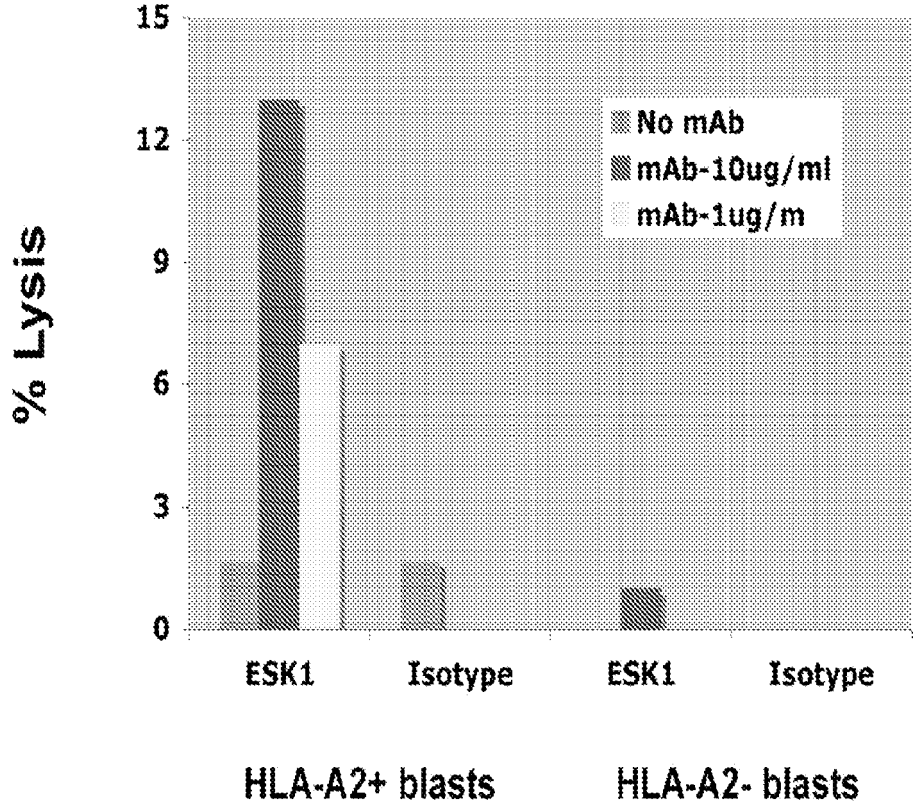

15
12
9
6
3
0
% Lysis
No mAb
mAb-10ug/ml
mAb-1ug/m
ESK1
Isotype
ESK1
Isotype
HLA-A2+ blasts
HLA-A2- blasts

Figure 30

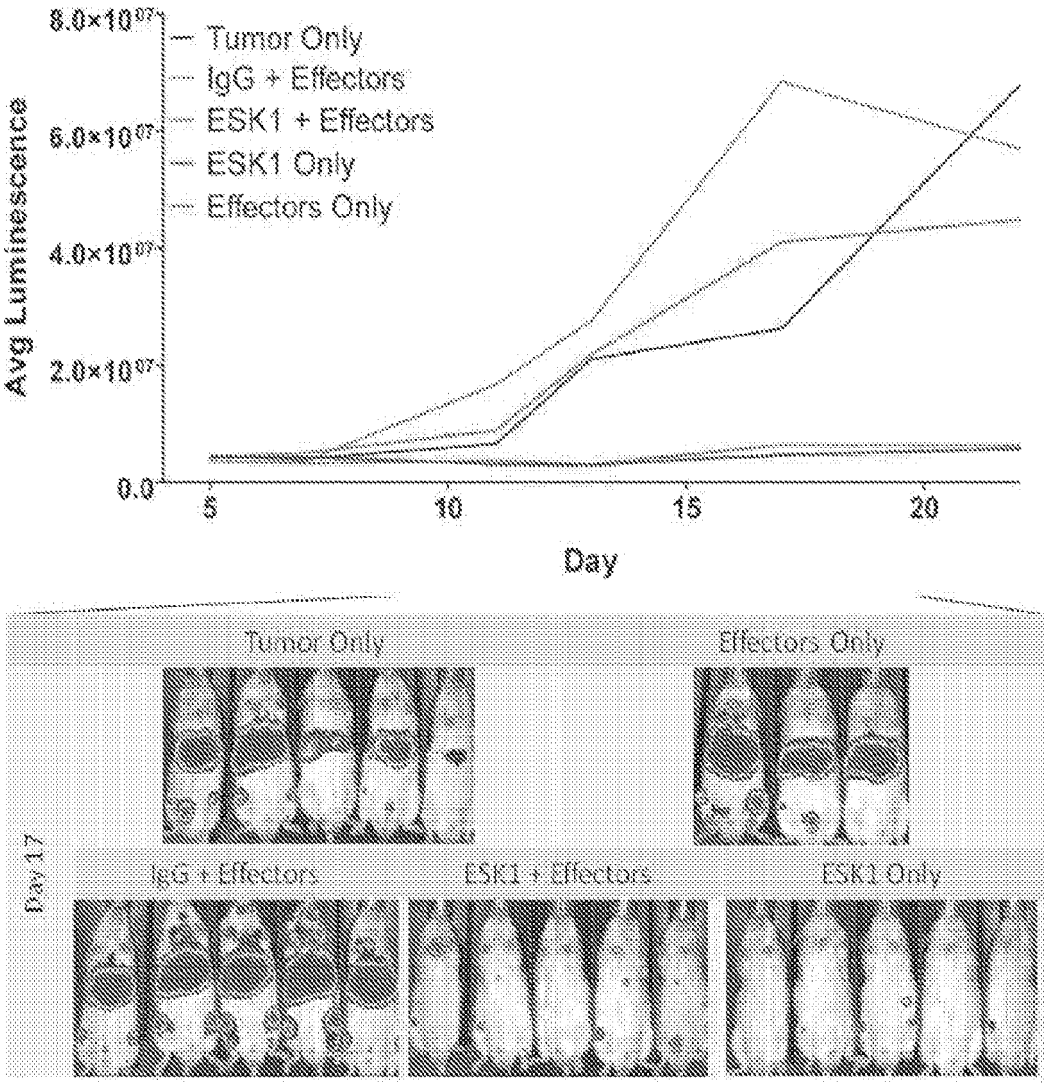

8.0×10^07
6.0×10^07
4.0×10^07
2.0×10^07
0.0
Avg Luminescence
Tumor Only
IgG + Effectors
ESK1 + Effectors
ESK1 Only
Effectors Only
5
10
15
20
Day
Tumor Only
Effectors Only
Day 17
IgG + Effectors
ESK1 + Effectors
ESK1 Only

Figure 31

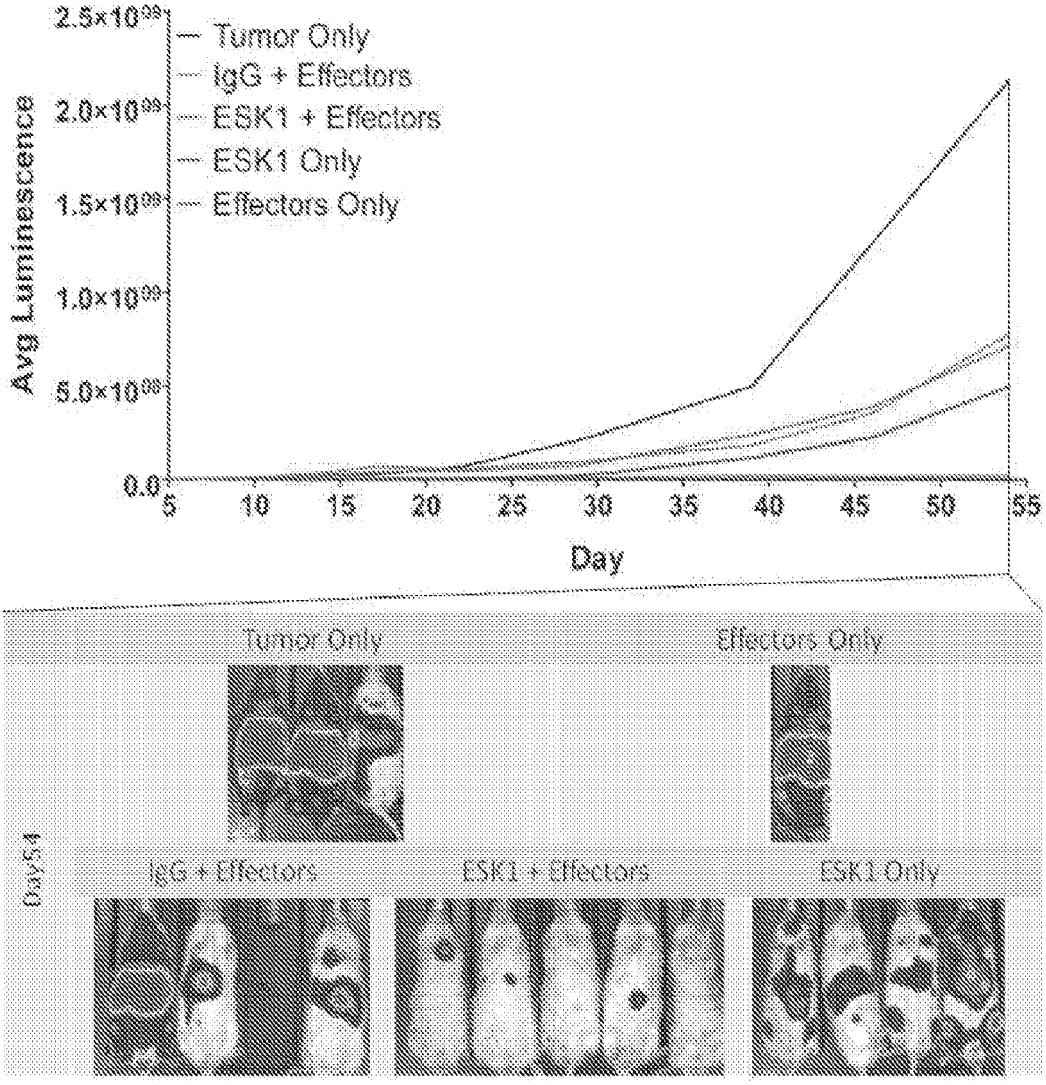

Avg Luminescence
2.5x10^09
2.0x10^09
1.5x10^09
1.0x10^09
5.0x10^08
0.0
Tumor Only
IgG + Effectors
ESK1 + Effectors
ESK1 Only
Effectors Only
5
10
15
20
25
30
35
40
45
50
55
Day
Tumor Only
Effectors Only
Day54
IgG + Effectors
ESK1 + Effectors
ESK1 Only

Figure 32

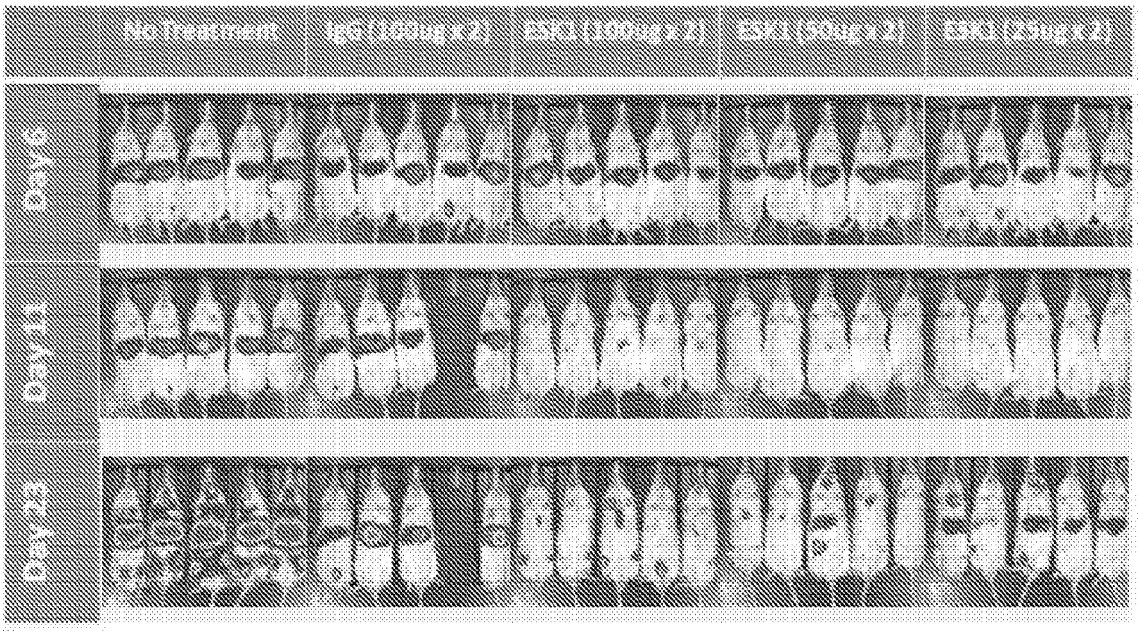


Figure 33

	HEK297-mAbs	CHO-mAbs	Cho-MAGE
No mAb	1	1	1
#13-10ug/ml	1	13	11
#13-3ug/m	8	8	15
#13-1ug/m	3	2	12
#13-0.3ug/ml	0		14
#13-0.1ug/m	3		5
#13-0.03ug/m	0		0
hIgG1-10ug/ml		0	0
hIgG1-3ug/ml		0	0
hIgG1-1ug/ml		0	0
hIgG1-0.3ug/ml			0
hIgG1-0.1ug/ml			2
hIgG1-0.03ug/ml			0

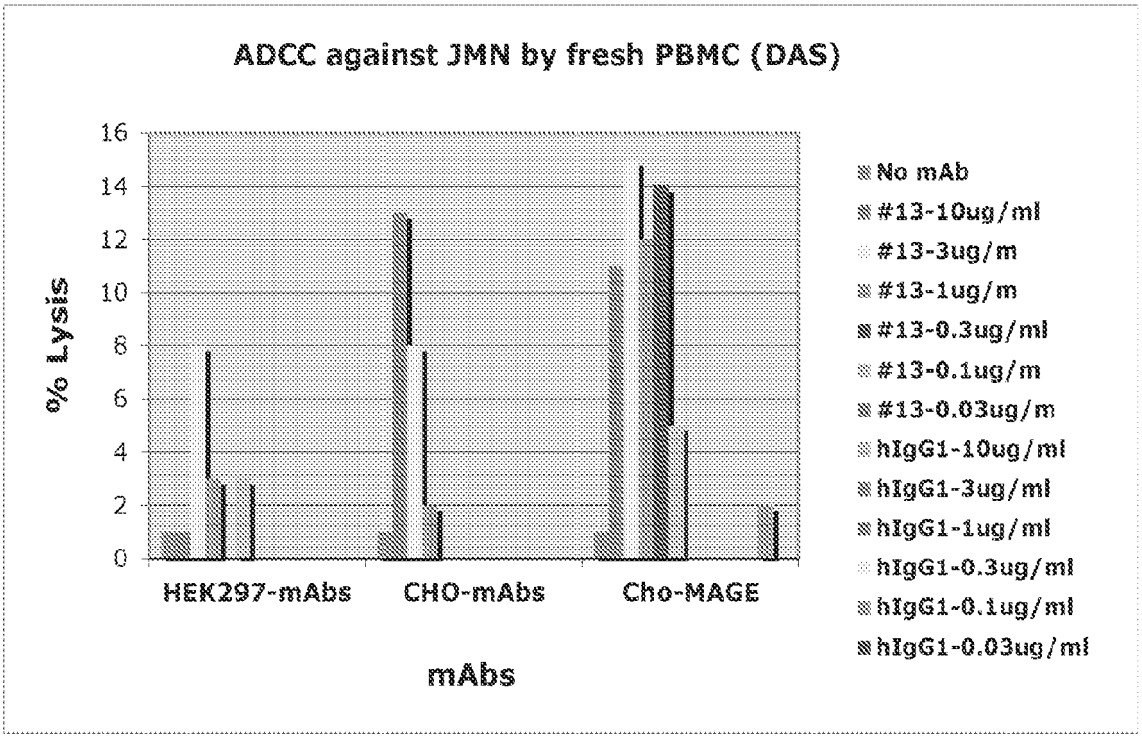


Figure 34