Fig. 1

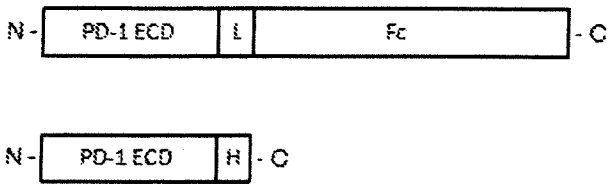
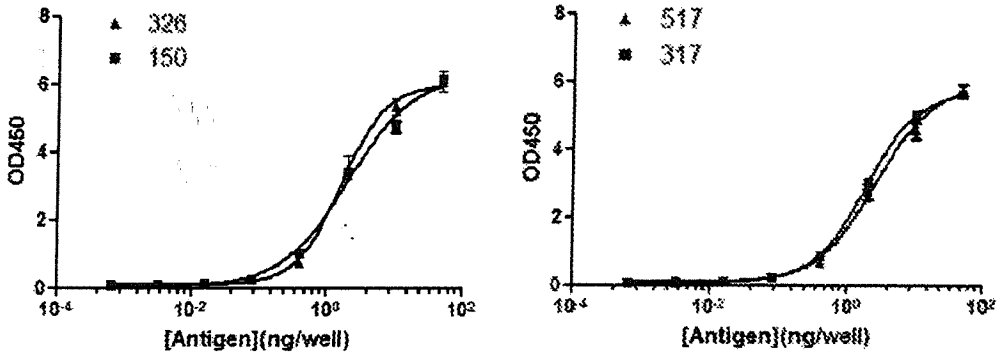

N-
PD-1 ECD
L
Fc
-C
N-
PD-1 ECD
H
-C

Fig. 2


326
150
OD450
[Antigen](ng/well)
517
317
OD450
[Antigen](ng/well)

. Fig. 3

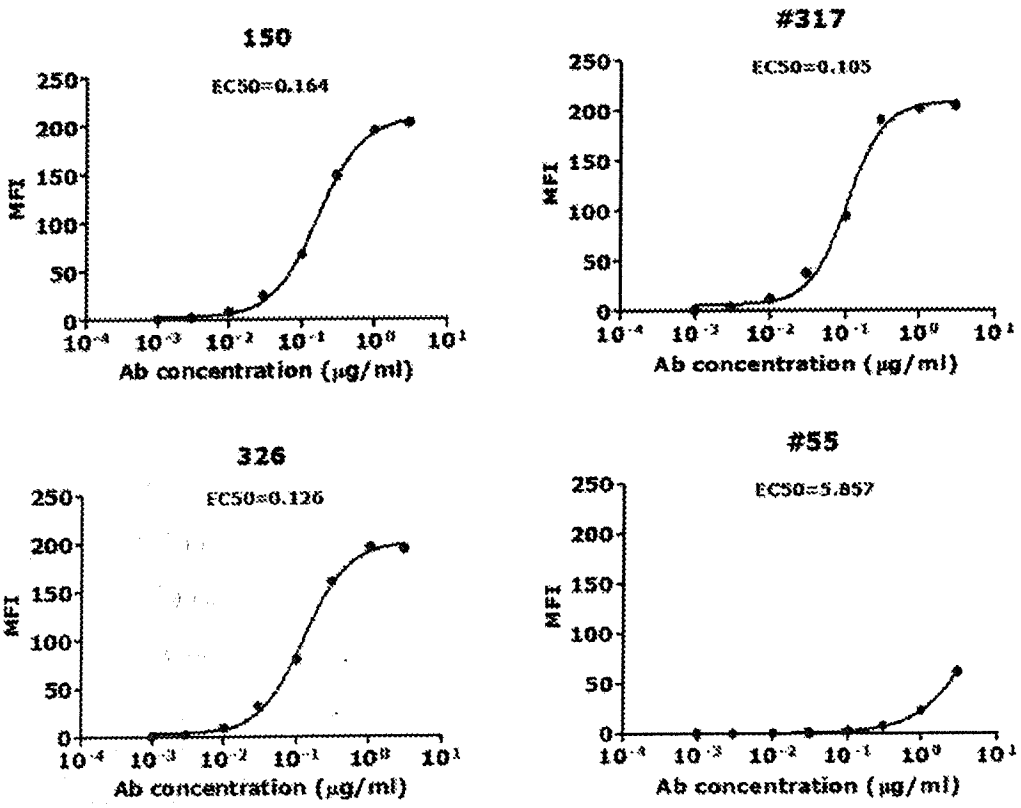

150
EC50=0.164
#317
EC50=0.105
326
EC50=0.126
#55
EC50=5.857
MFI
Ab concentration (μg/ml)

Fig. 4

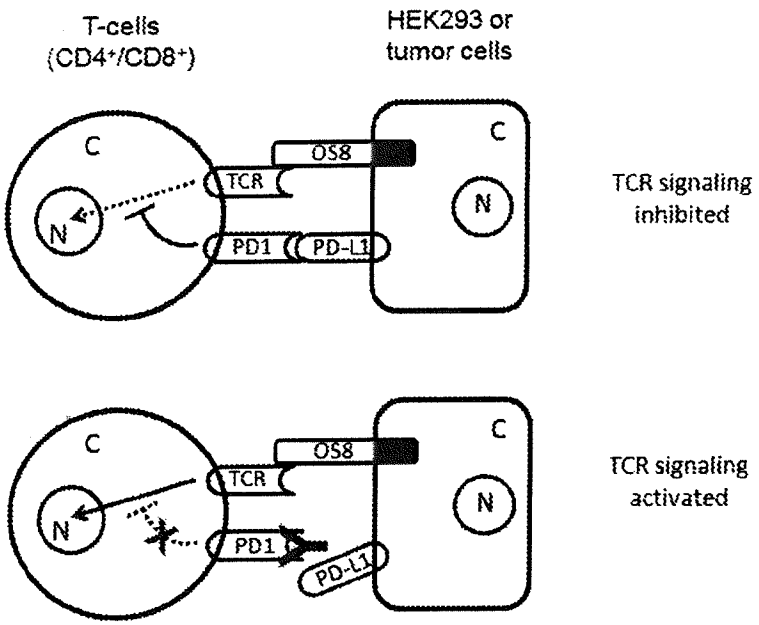

T-cells
(CD4+/CD8+)
HEK293 or
tumor cells
C
N
TCR
OS8
PD1
PD-L1
TCR signaling
inhibited
TCR signaling
activated

Fig. 5

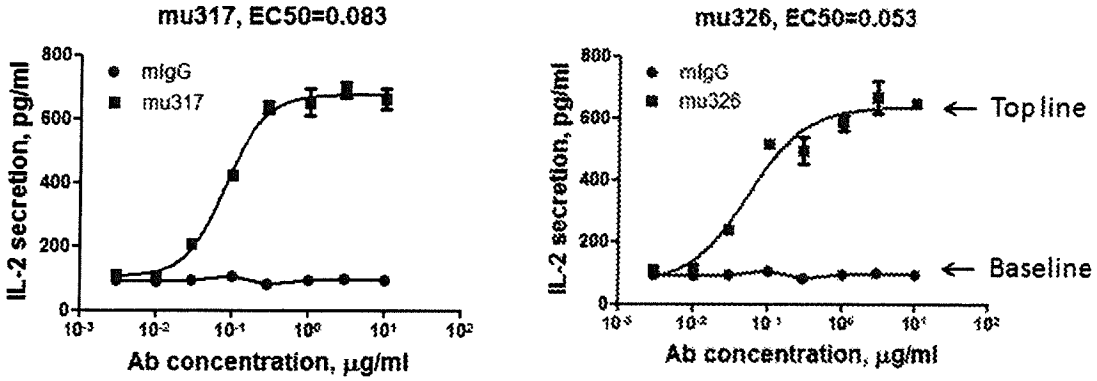
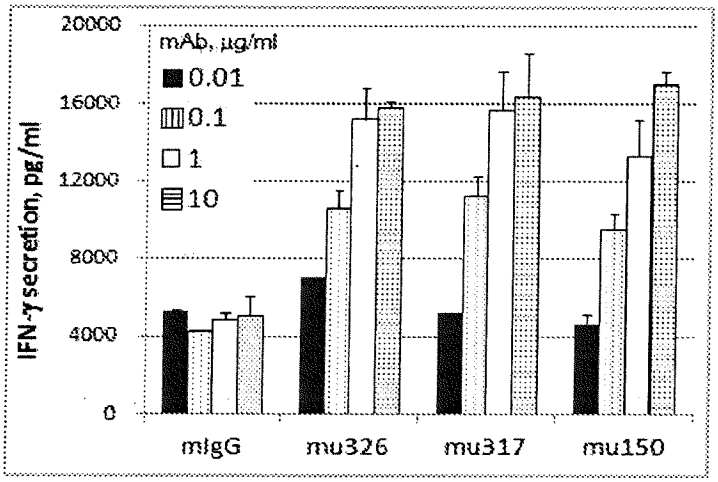

mu317, EC50=0.083
mu326, EC50=0.053
mIgG
mu317
mu326
IL-2 secretion, pg/ml
Ab concentration, μg/ml
Top line
Baseline

Fig. 6 (A)


mAb, μg/ml
0.01
0.1
1
10
IFN-γ secretion, pg/ml
mIgG
mu326
mu317
mu150

(B)

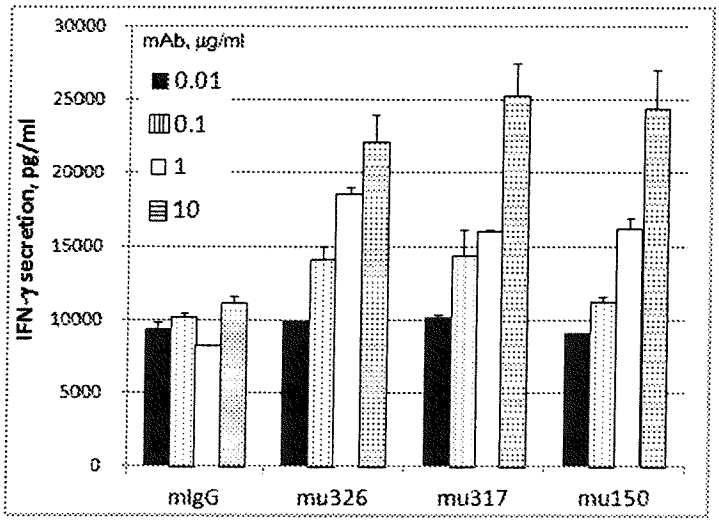

mAb, μg/ml
0.01
0.1
1
10
IFN-γ secretion, pg/ml
mIgG
mu326
mu317
mu150

Fig. 7

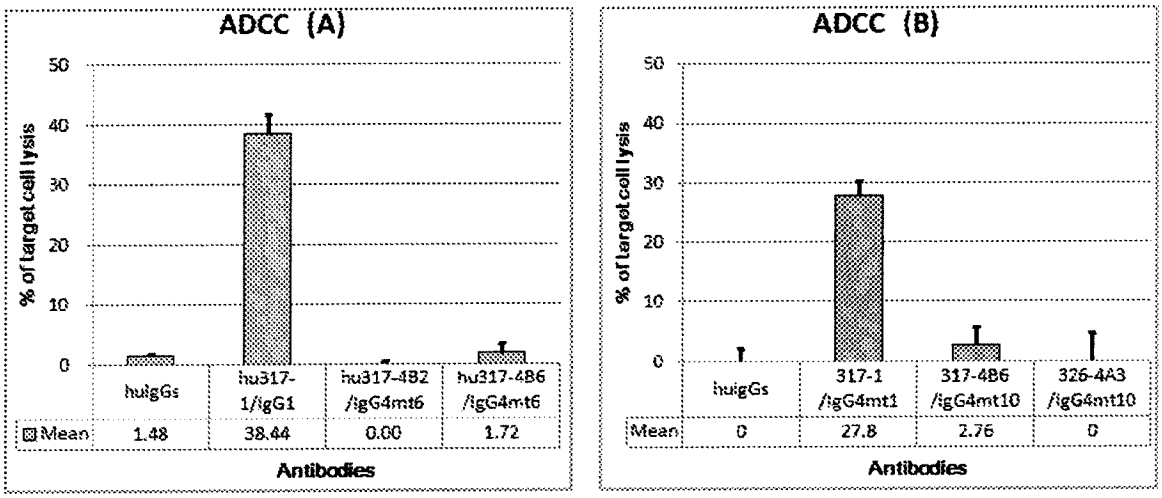

ADCC (A)
% of target cell lysis
50
40
30
20
10
0
huIgGs
hu317-1/IgG1
hu317-4B2 /IgG4mt6
hu317-4B6 /IgG4mt6
Mean
1.48
38.44
0.00
1.72
Antibodies
ADCC (B)
% of target cell lysis
huIgGs
317-1 /IgG4mt1
317-4B6 /IgG4mt10
326-4A3 /IgG4mt10
Mean
0
27.8
2.76
0
Antibodies

Fig. 8

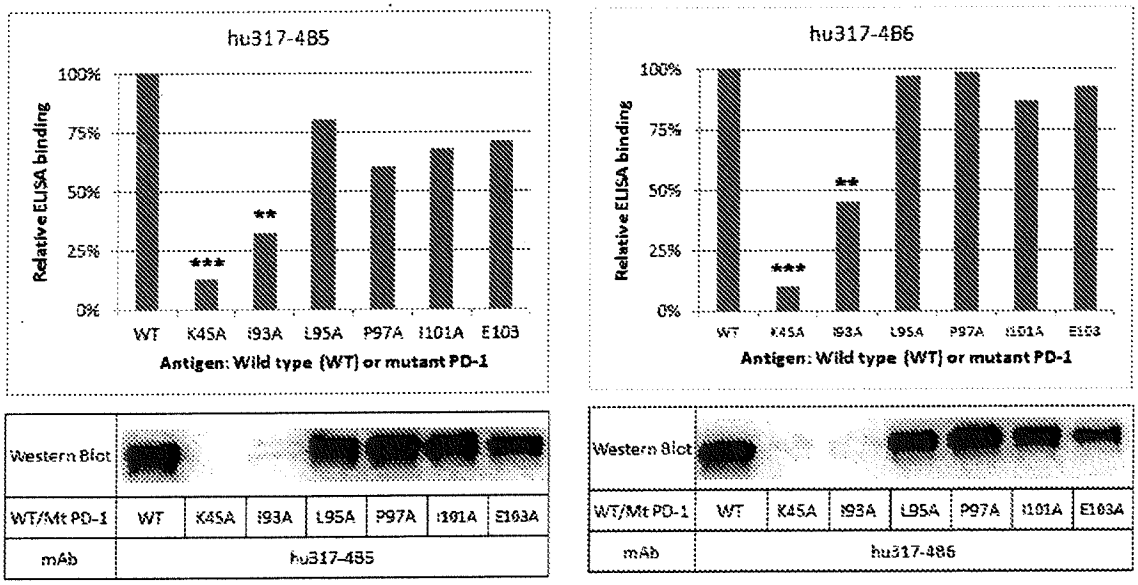

hu317-4B5
Relative ELISA binding
100%
75%
50%
25%
0%
***
**
WT
K45A
I93A
L95A
P97A
I101A
E103
Antigen: Wild type (WT) or mutant PD-1
Western Blot
WT/Mt PD-1
WT
K45A
I93A
L95A
P97A
I101A
E103A
mAb
hu317-4B5
hu317-4B6
Relative ELISA binding
100%
75%
50%
25%
0%
***
**
WT
K45A
I93A
L95A
P97A
I101A
E103
Antigen: Wild type (WT) or mutant PD-1
Western Blot
WT/Mt PD-1
WT
K45A
I93A
L95A
P97A
I101A
E103A
mAb
hu317-4B6

Fig. 8 (cont'd)

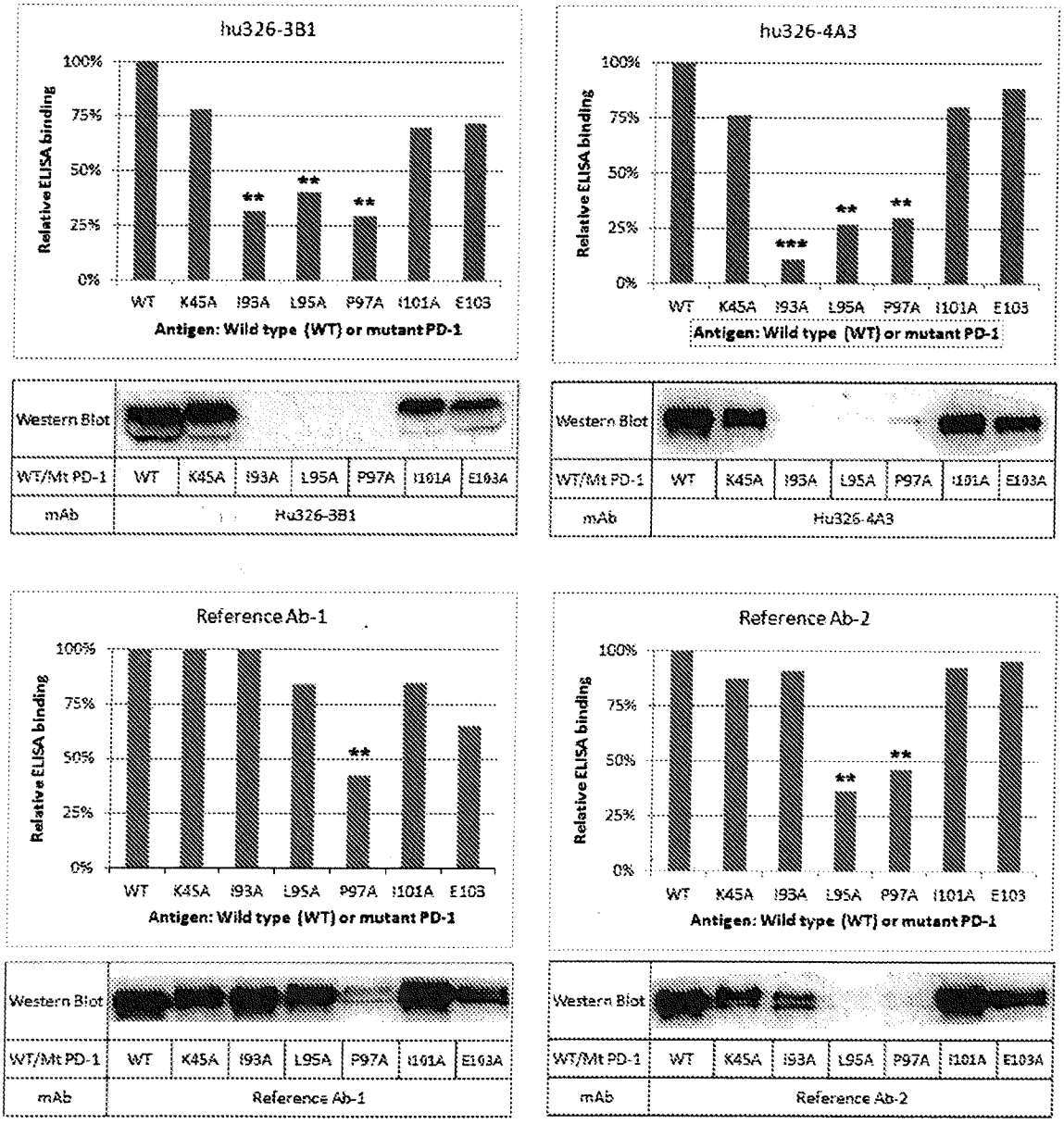

hu326-3B1
Relative ELISA binding
100%
75%
50%
25%
0%
**
**
**
WT K45A I93A L95A P97A I101A E103
Antigen: Wild type (WT) or mutant PD-1
Western Blot
WT/Mt PD-1
WT K45A I93A L95A P97A I101A E103A
mAb
Hu326-3B1
hu326-4A3
***
**
**
Hu326-4A3
Reference Ab-1
Reference Ab-2

Fig. 9.

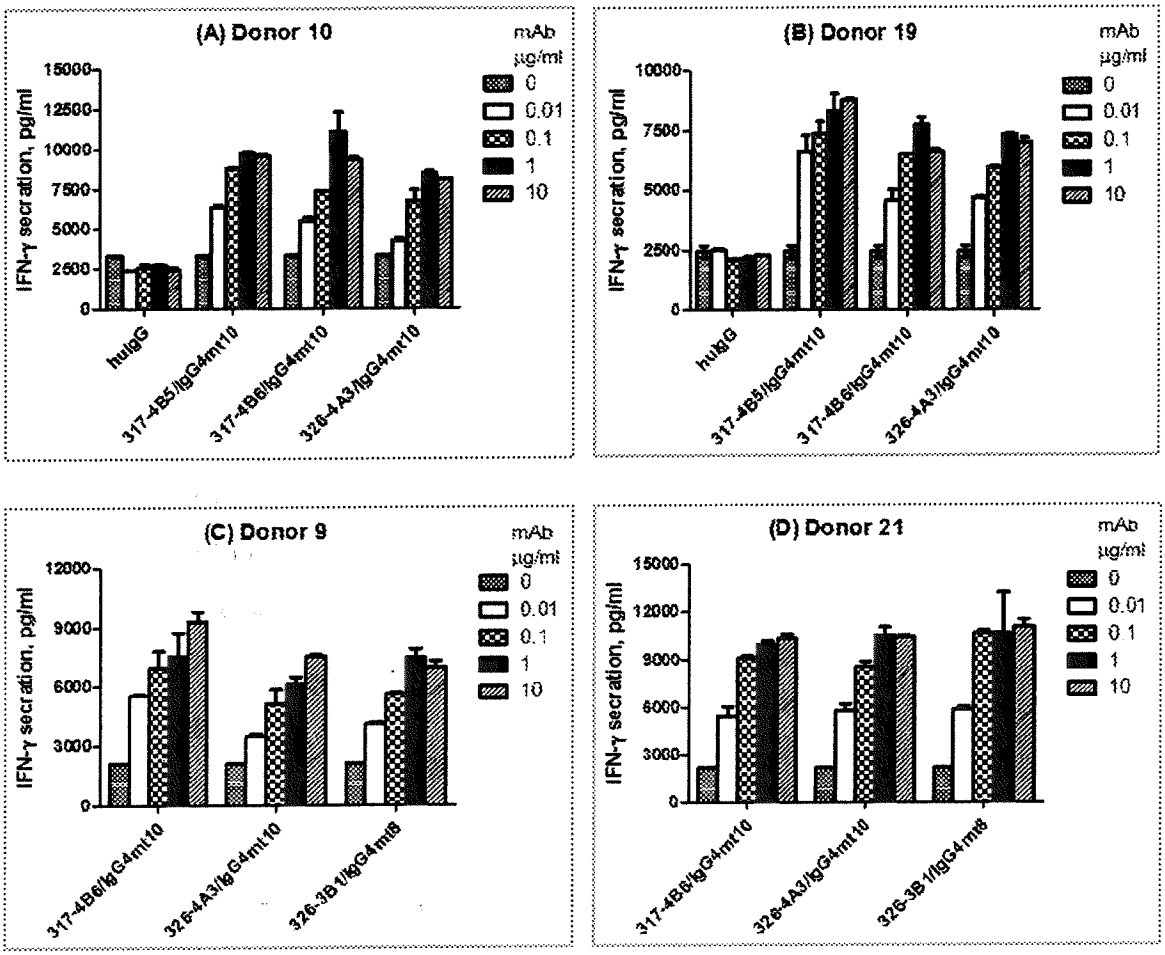

(A) Donor 10
(B) Donor 19
(C) Donor 9
(D) Donor 21
IFN-γ secration, pg/ml
mAb μg/ml
0
0.01
0.1
1
10
huIgG
317-4B5/IgG4mt10
317-4B6/IgG4mt10
326-4A3/IgG4mt10
326-3B1/IgG4mt8

Fig. 10

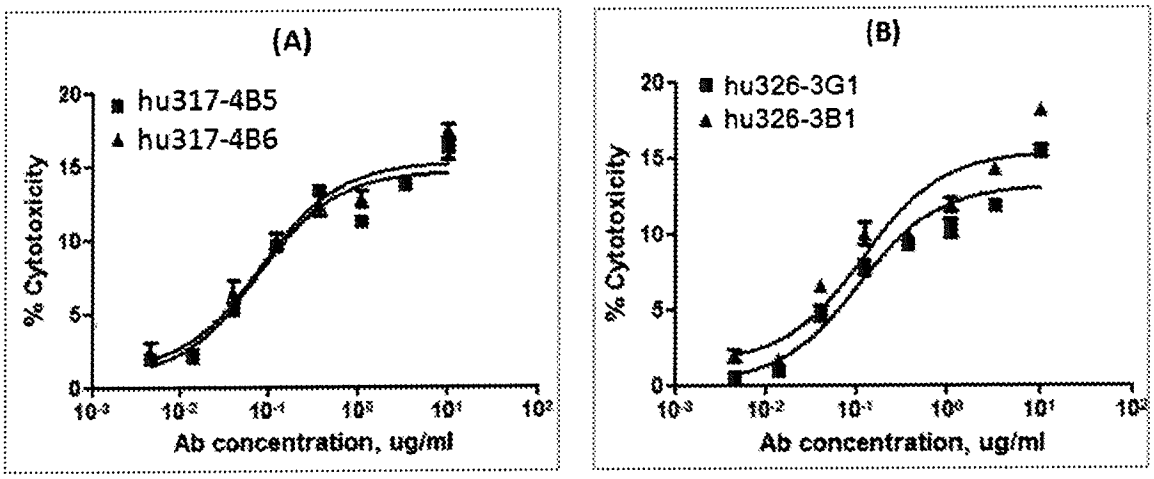
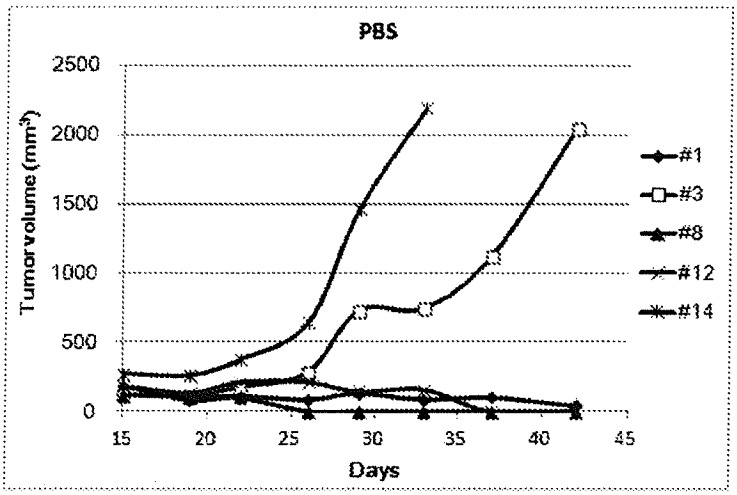
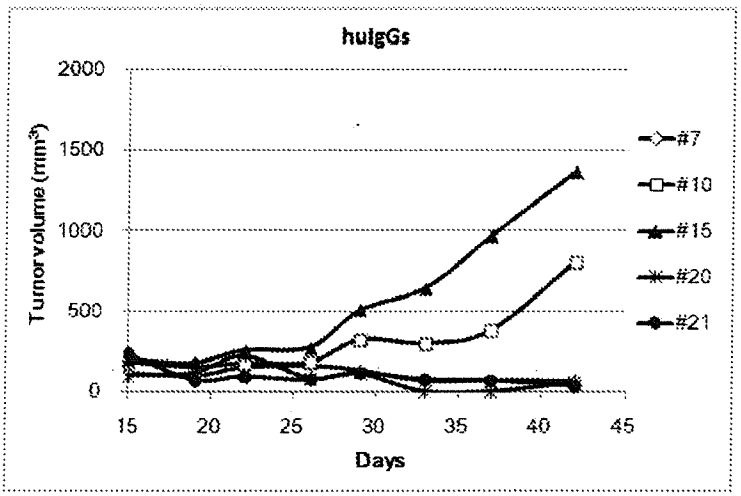
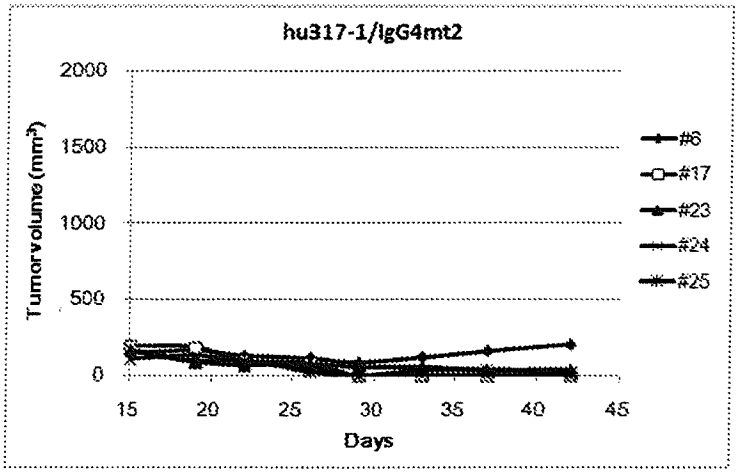

(A)
hu317-4B5
hu317-4B6
% Cytotoxicity
Ab concentration, ug/ml
(B)
hu326-3G1
hu326-3B1
% Cytotoxicity
Ab concentration, ug/ml

Fig. 11


PBS
Tumor volume (mm³)
2500
2000
1500
1000
500
0
15
20
25
30
35
40
45
Days
#1
#3
#8
#12
#14


huIgGs
Tumor volume (mm³)
2000
1500
1000
500
0
15
20
25
30
35
40
45
Days
#7
#10
#15
#20
#21


hu317-1/IgG4mt2
Tumor volume (mm³)
2000
1500
1000
500
0
15
20
25
30
35
40
45
Days
#6
#17
#23
#24
#25