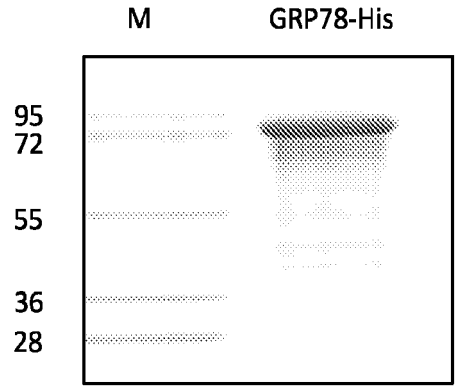


FIG. 1A

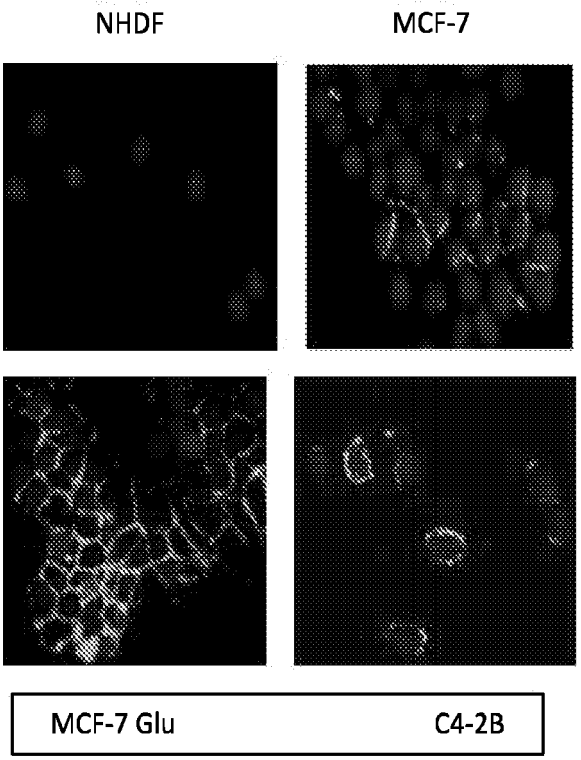


FIG. 1B

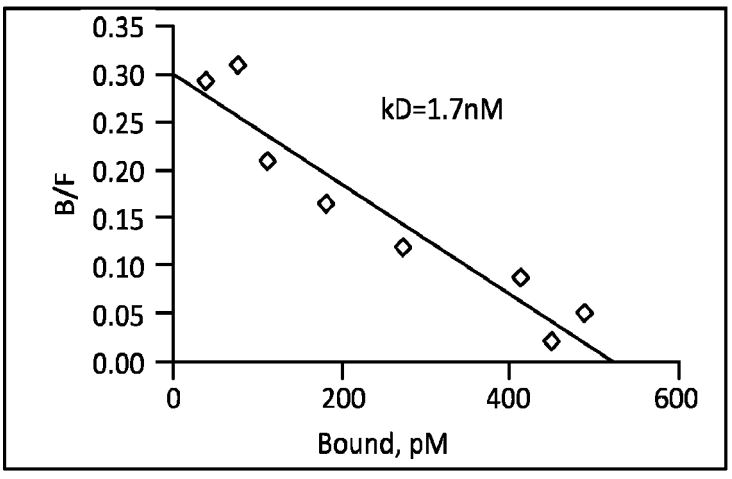


FIG. 1C

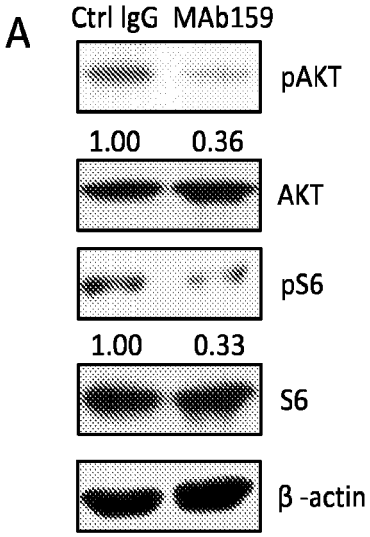


FIG. 2A

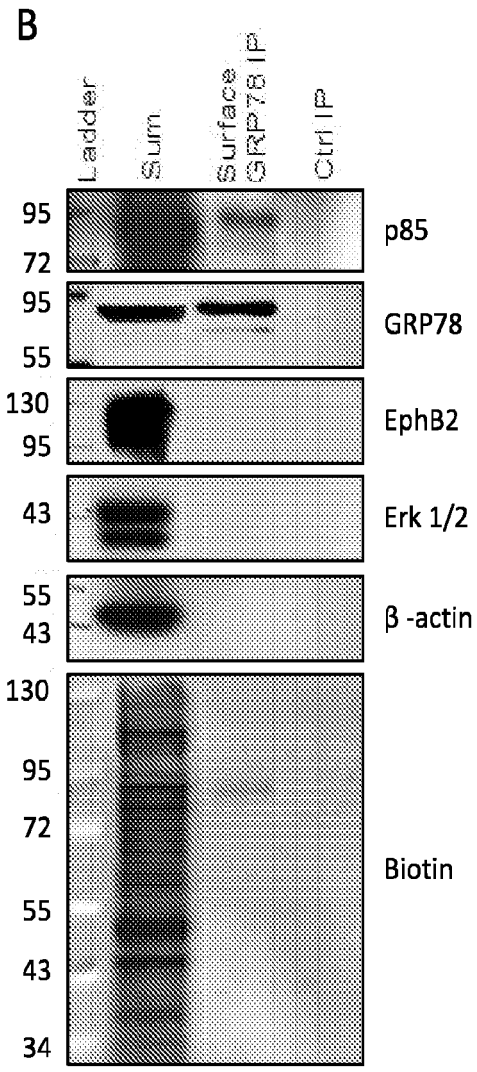


FIG. 2B

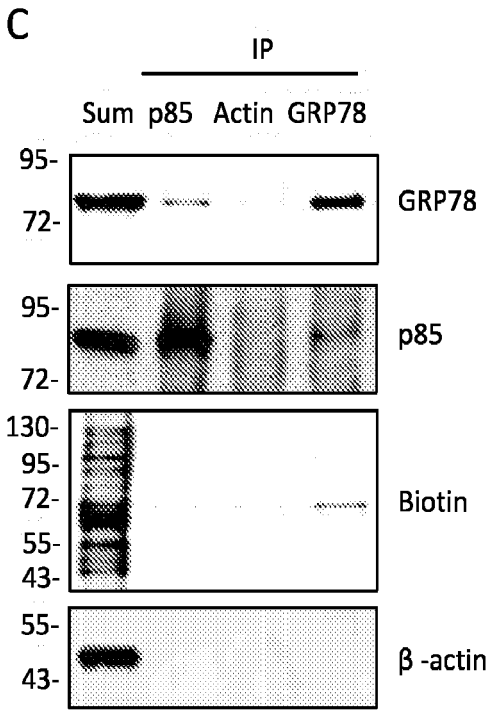


FIG. 2C

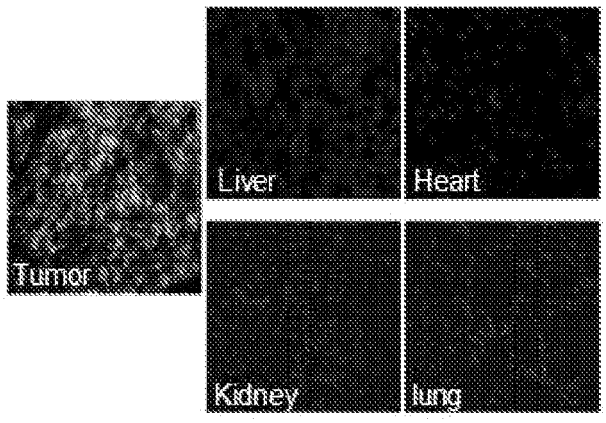


FIG. 3A

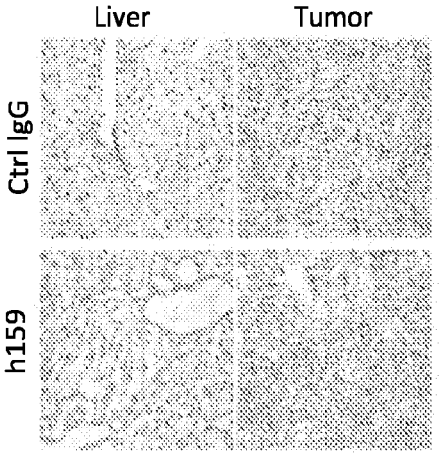


FIG. 3C

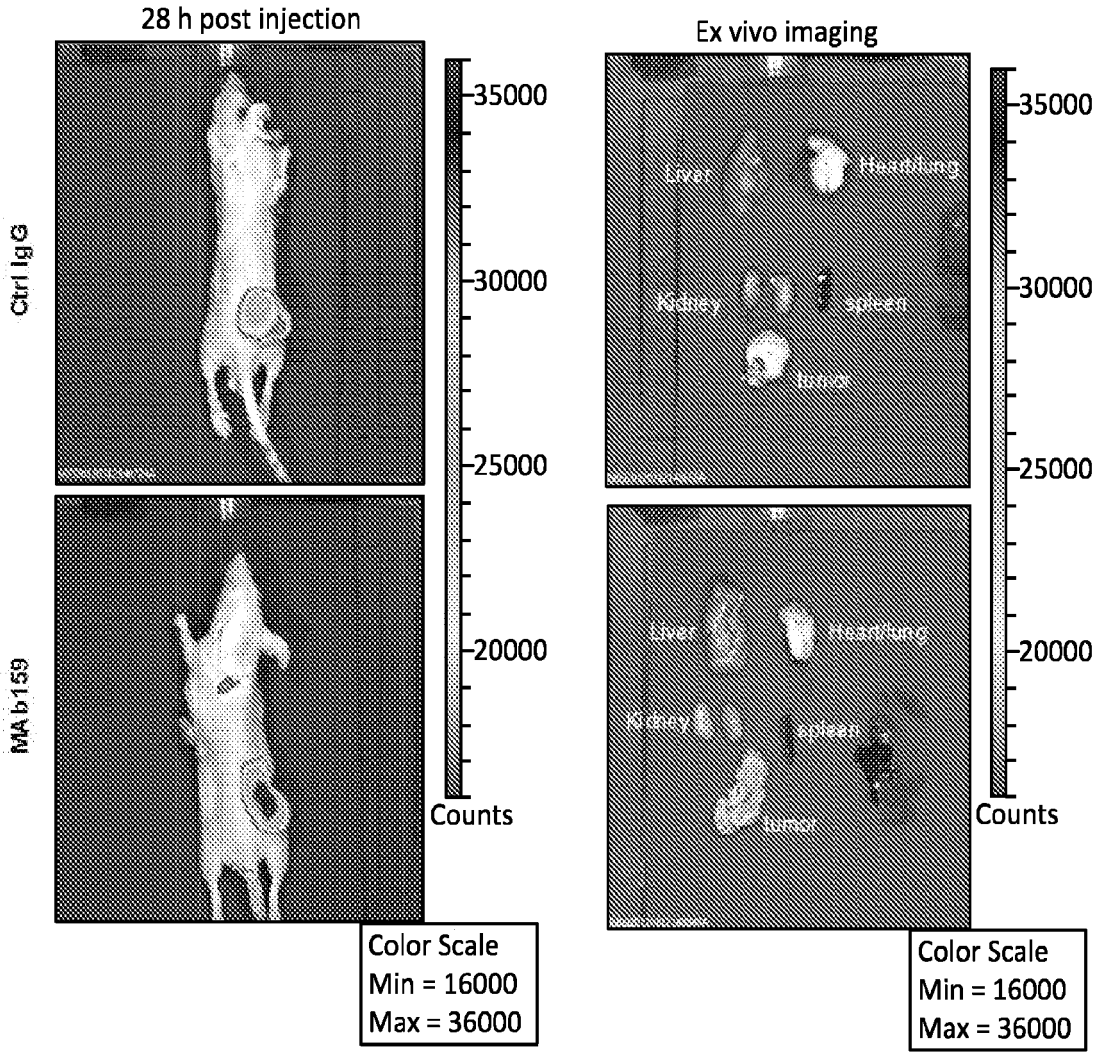


FIG. 3B

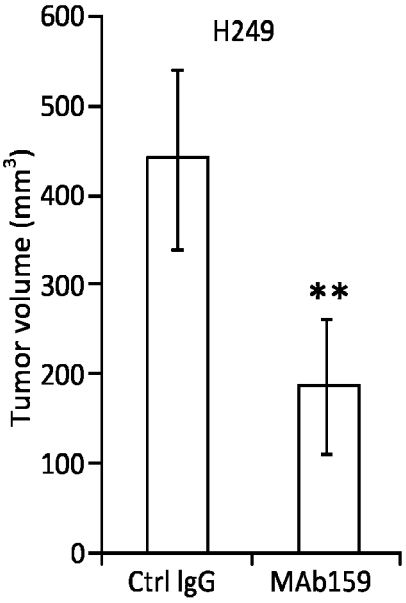


FIG. 4A

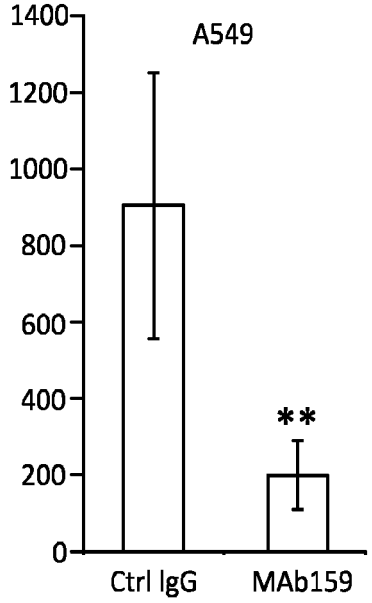


FIG. 4B

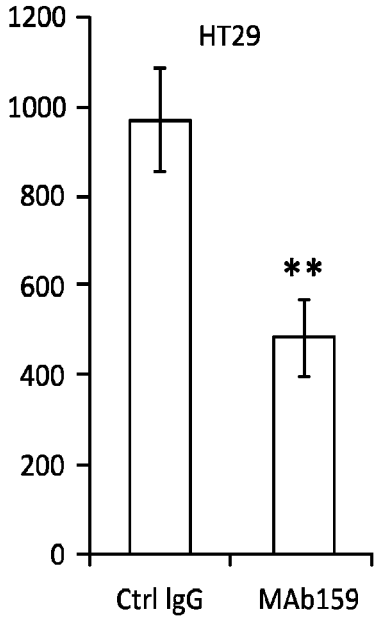


FIG. 4C

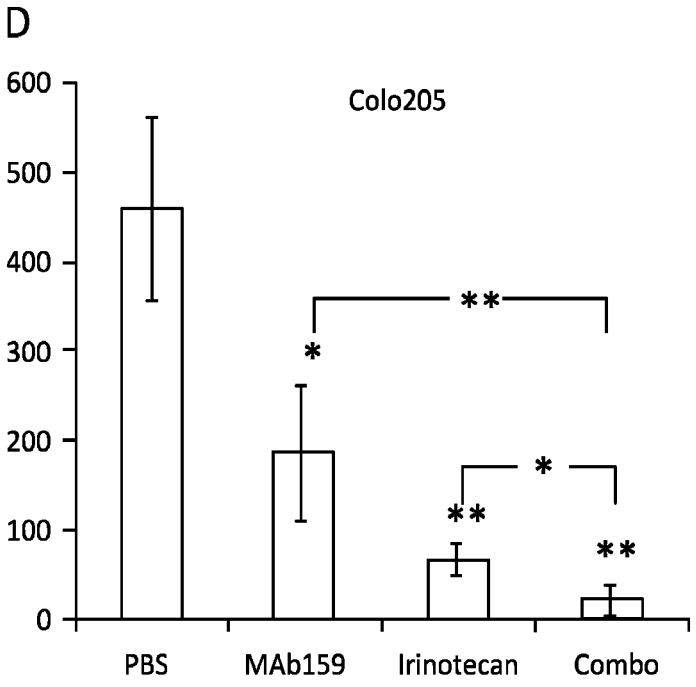


FIG. 4D

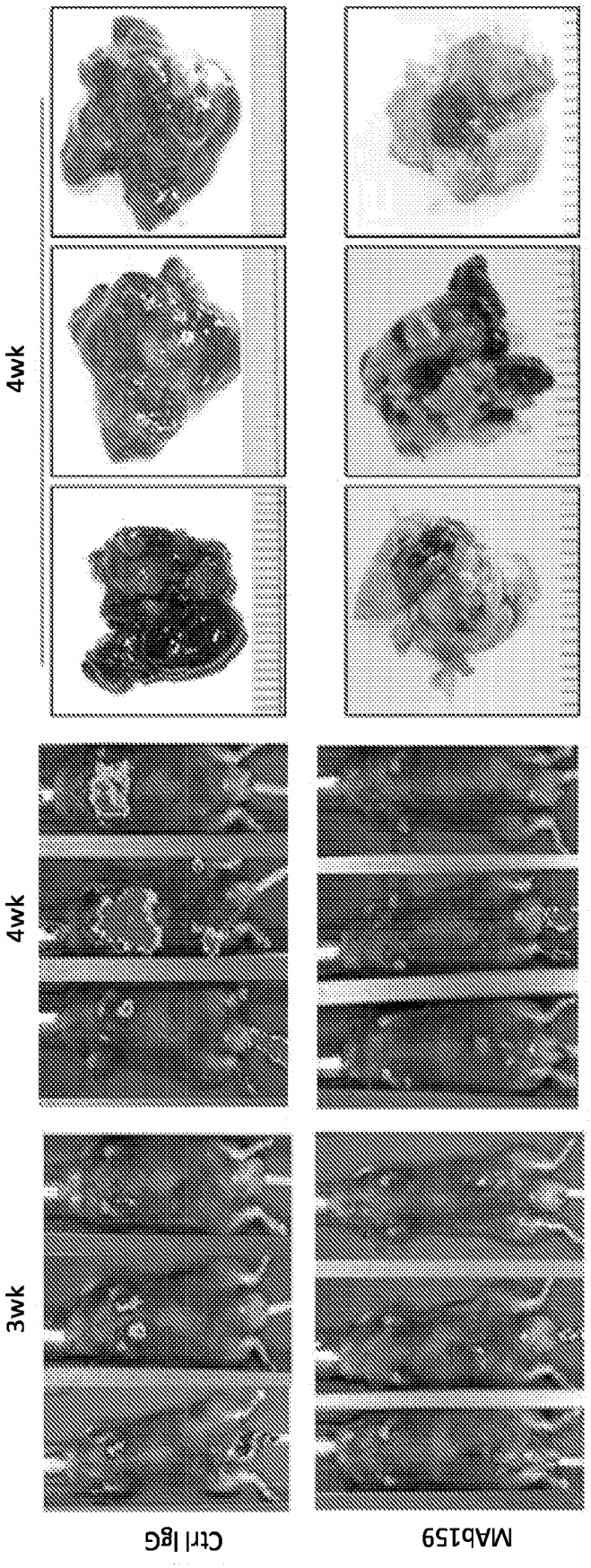


FIG. 4E

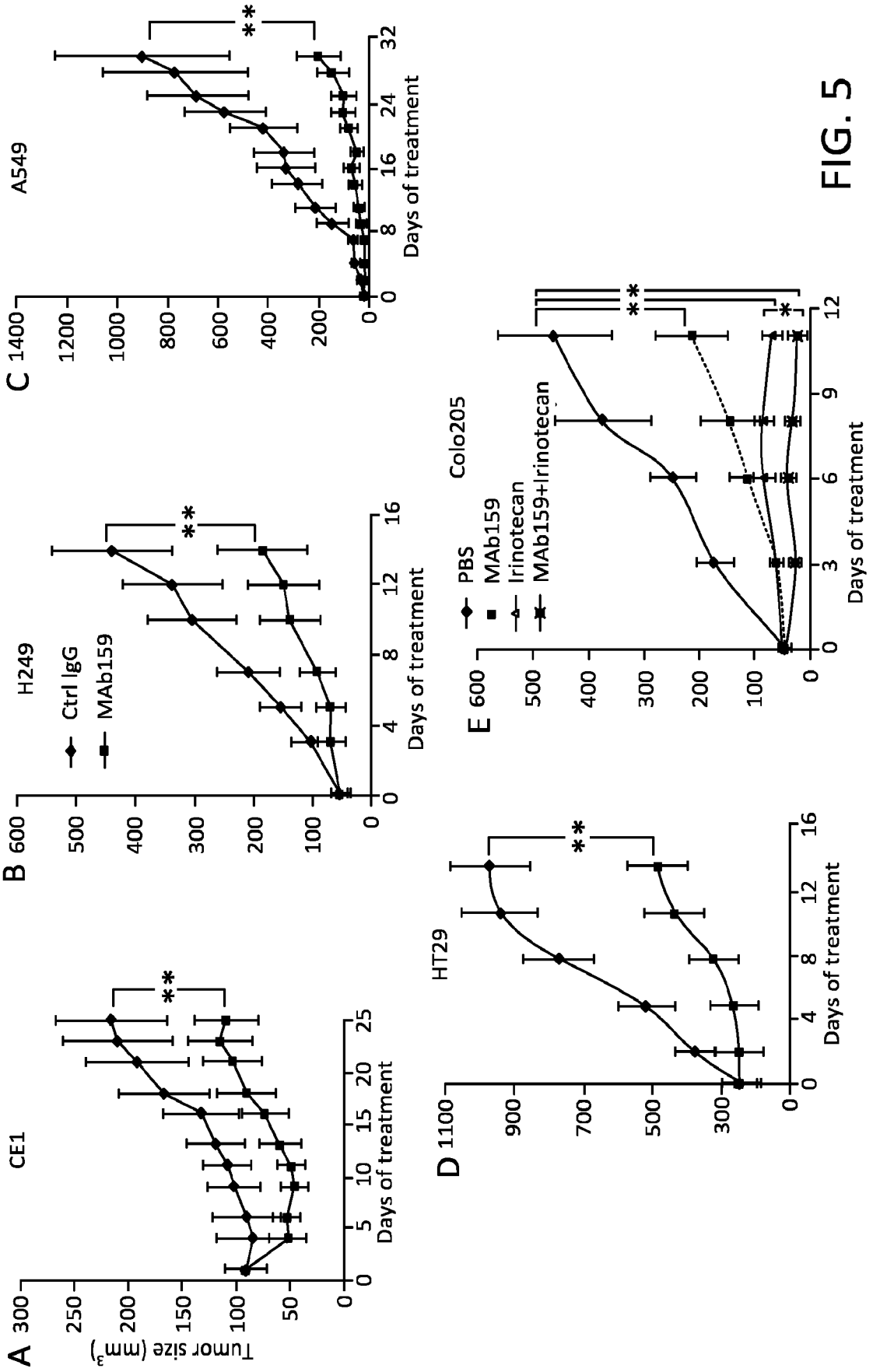

A
CE1
Tumor size (mm³)
Days of treatment
B
H249
Ctrl IgG
MAb159
Days of treatment
C
A549
Days of treatment
D
HT29
Days of treatment
E
Colo205
PBS
MAb159
Irinotecan
MAb159+Irinotecan
Days of treatment

FIG. 5

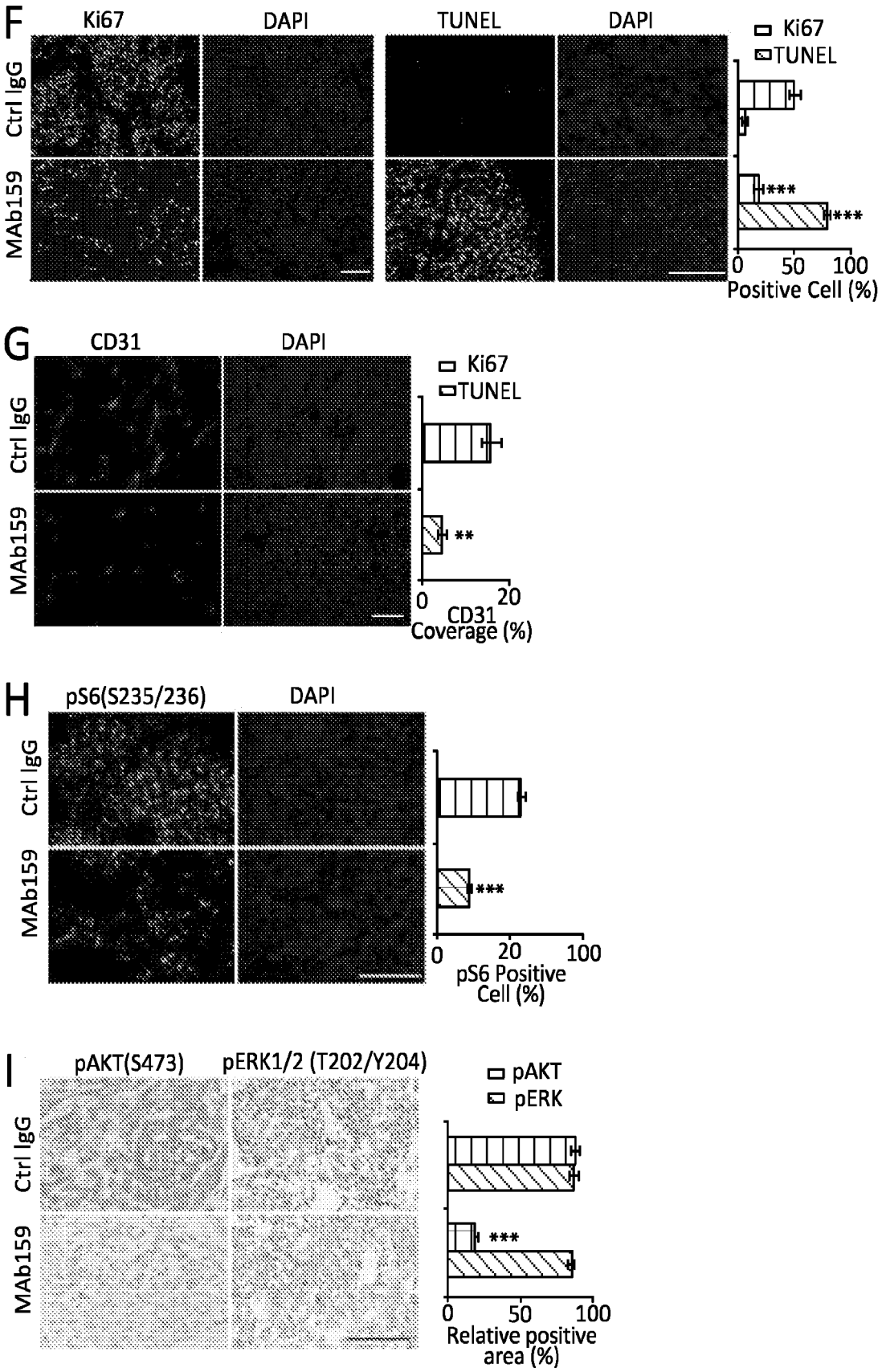

F
Ki67
DAPI
TUNEL
DAPI
Ctrl IgG
MAb159
Ki67
TUNEL
***
***
0
50
100
Positive Cell (%)
G
CD31
DAPI
Ctrl IgG
MAb159
Ki67
TUNEL
**
0
20
CD31
Coverage (%)
H
pS6(S235/236)
DAPI
Ctrl IgG
MAb159
***
0
20
100
pS6 Positive
Cell (%)
I
pAKT(S473)
pERK1/2 (T202/Y204)
Ctrl IgG
MAb159
pAKT
pERK
***
0
50
100
Relative positive
area (%)

FIG. 5

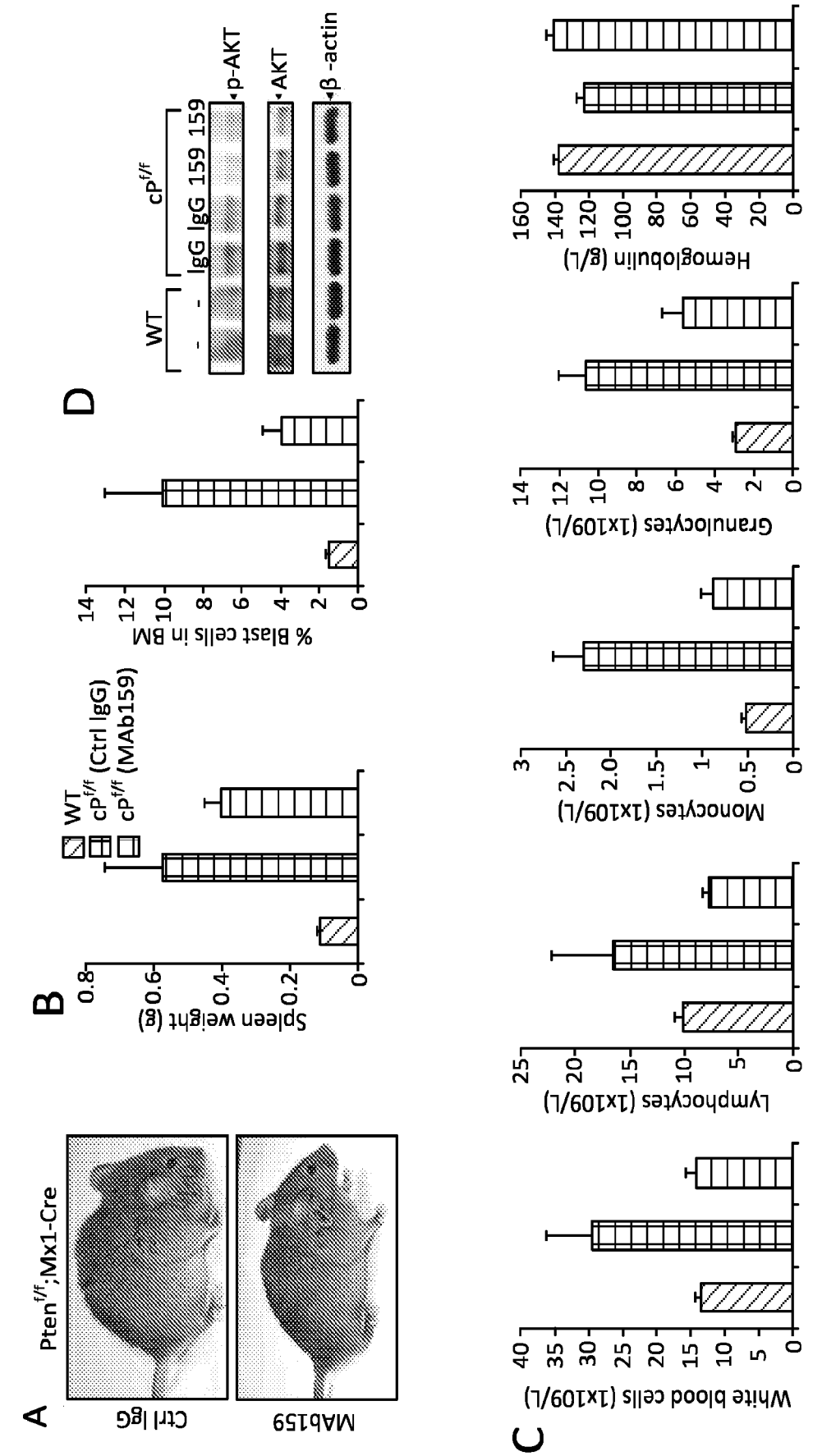

A
Pten f/f;Mx1-Cre
Ctrl IgG
MAb159
B
Spleen weight (g)
WT
cP f/f (Ctrl IgG)
cP f/f (MAb159)
C
White blood cells (1x109/L)
Lymphocytes (1x109/L)
Monocytes (1x109/L)
Granulocytes (1x109/L)
Hemoglobulin (g/L)
D
% Blast cells in BM
WT
cP f/f
- - IgG IgG 159 159
p-AKT
AKT
β -actin

FIG. 6

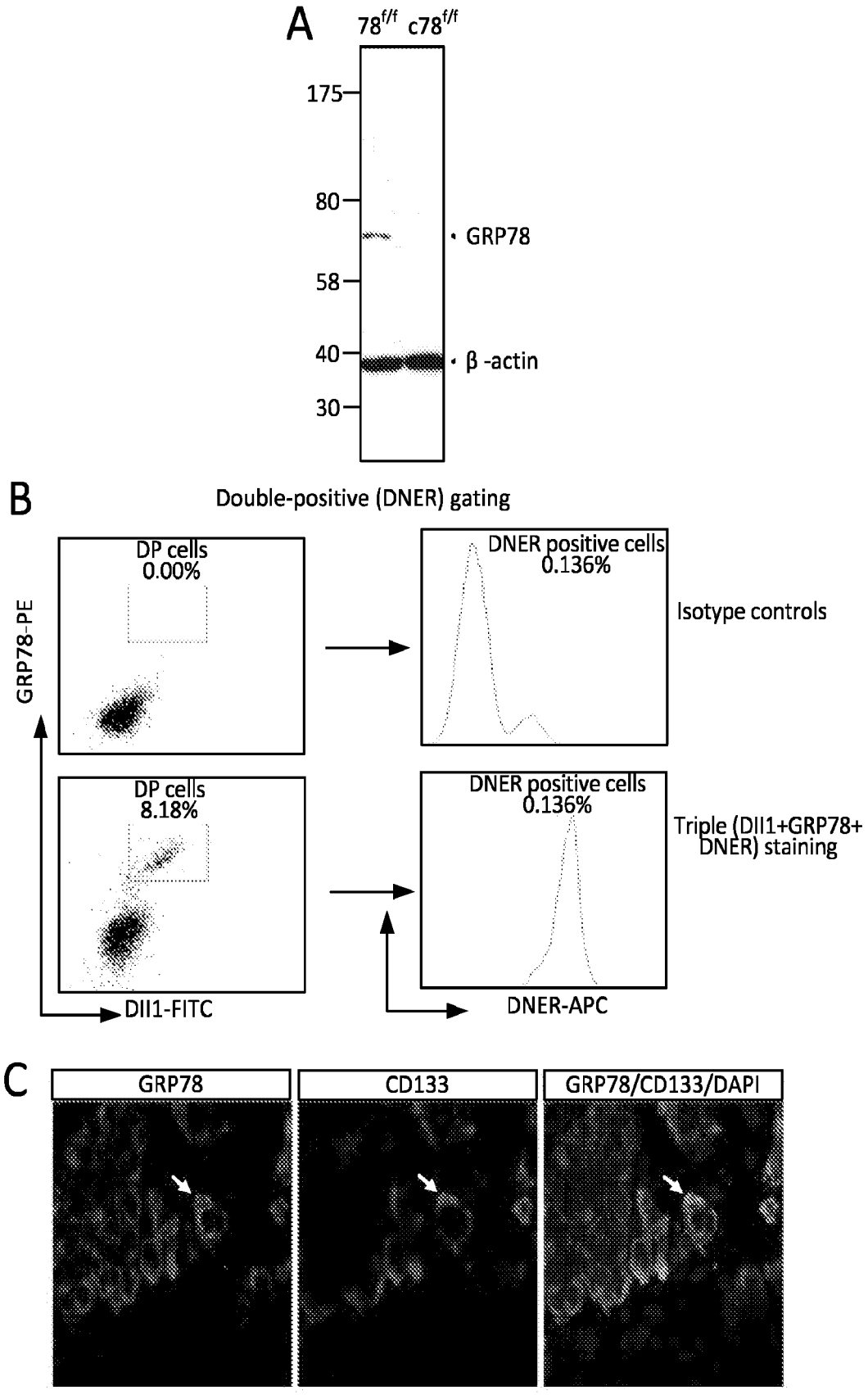

A
78f/f c78f/f
175
80
58
40
30
GRP78
β -actin
B
Double-positive (DNER) gating
DP cells
0.00%
DNER positive cells
0.136%
Isotype controls
GRP78-PE
DP cells
8.18%
DNER positive cells
0.136%
Triple (DII1+GRP78+
DNER) staining
DII1-FITC
DNER-APC
C
GRP78
CD133
GRP78/CD133/DAPI

Fig. 7

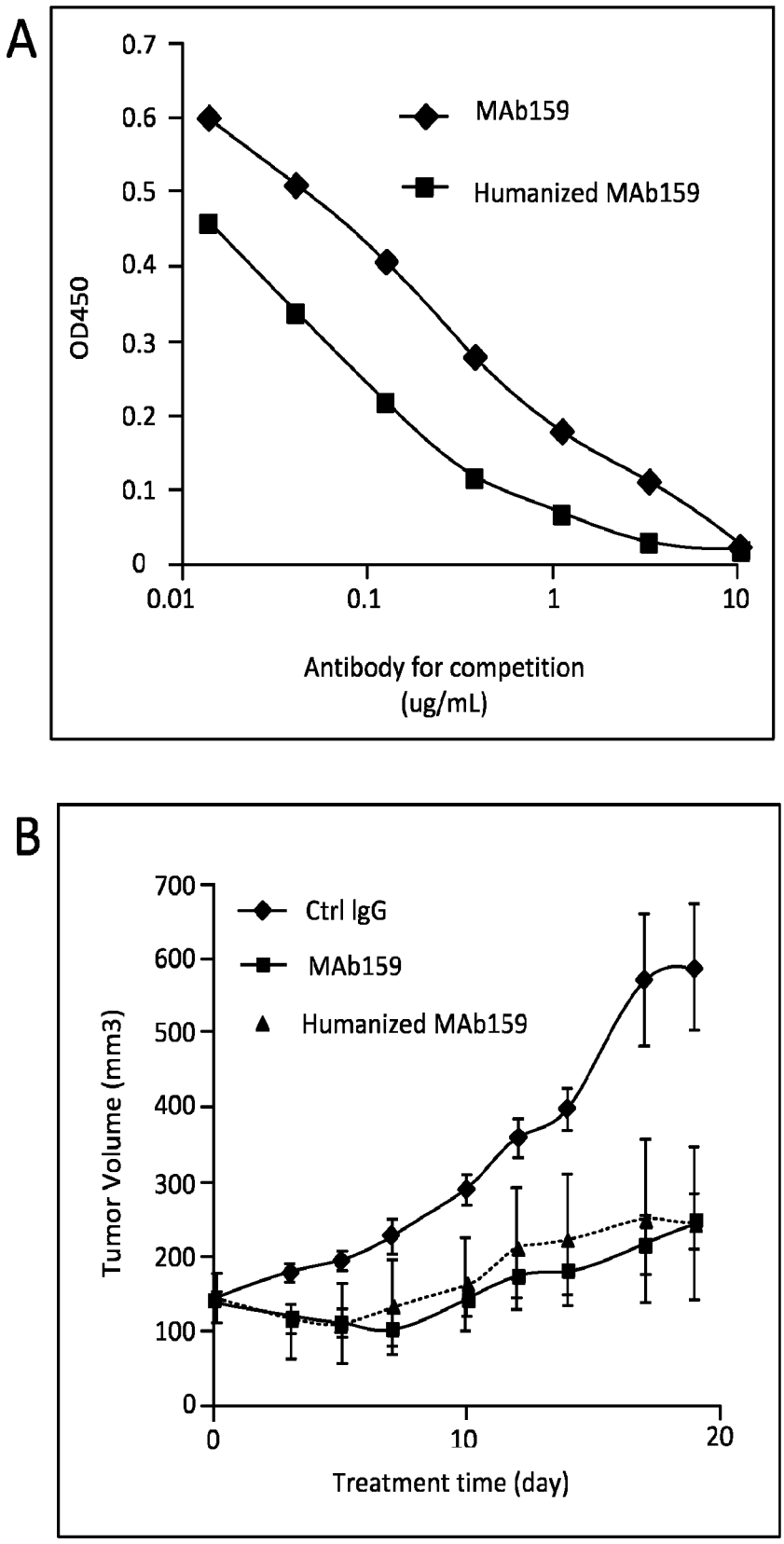

A
0.7
0.6
0.5
0.4
0.3
0.2
0.1
0
OD450
MAb159
Humanized MAb159
0.01
0.1
1
10
Antibody for competition
(ug/mL)
B
700
600
500
400
300
200
100
0
Tumor Volume (mm3)
Ctrl IgG
MAb159
Humanized MAb159
0
10
20
Treatment time (day)

FIG. 8

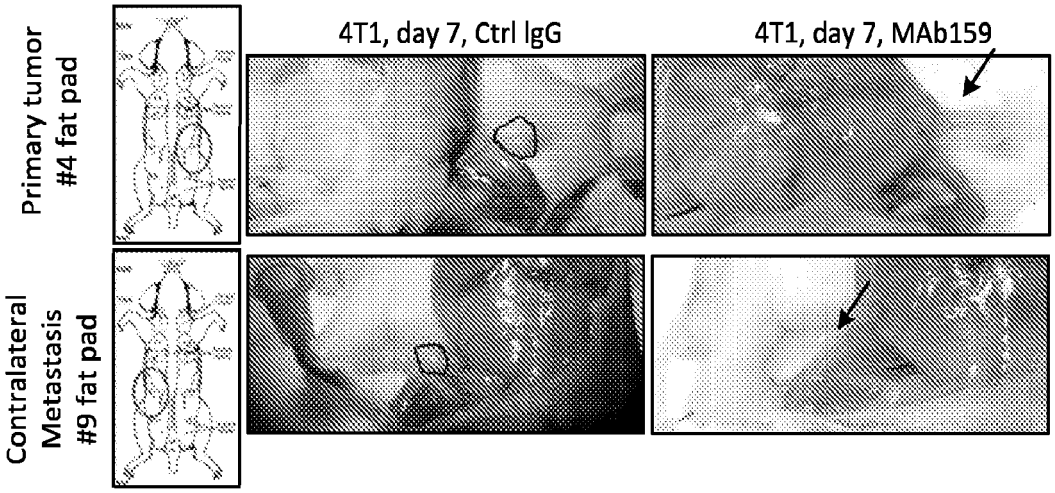

4T1, day 7, Ctrl IgG
4T1, day 7, MAb159
Primary tumor #4 fat pad
Contralateral Metastasis #9 fat pad

FIG. 9A

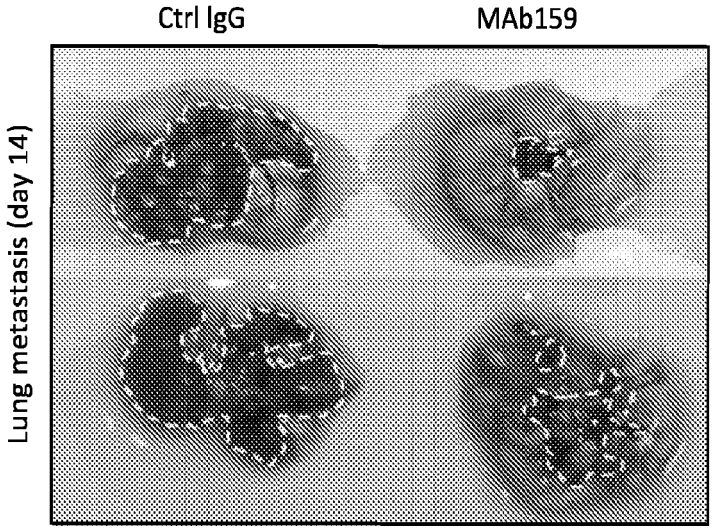

Ctrl IgG
MAb159
Lung metastasis (day 14)

FIG. 9B

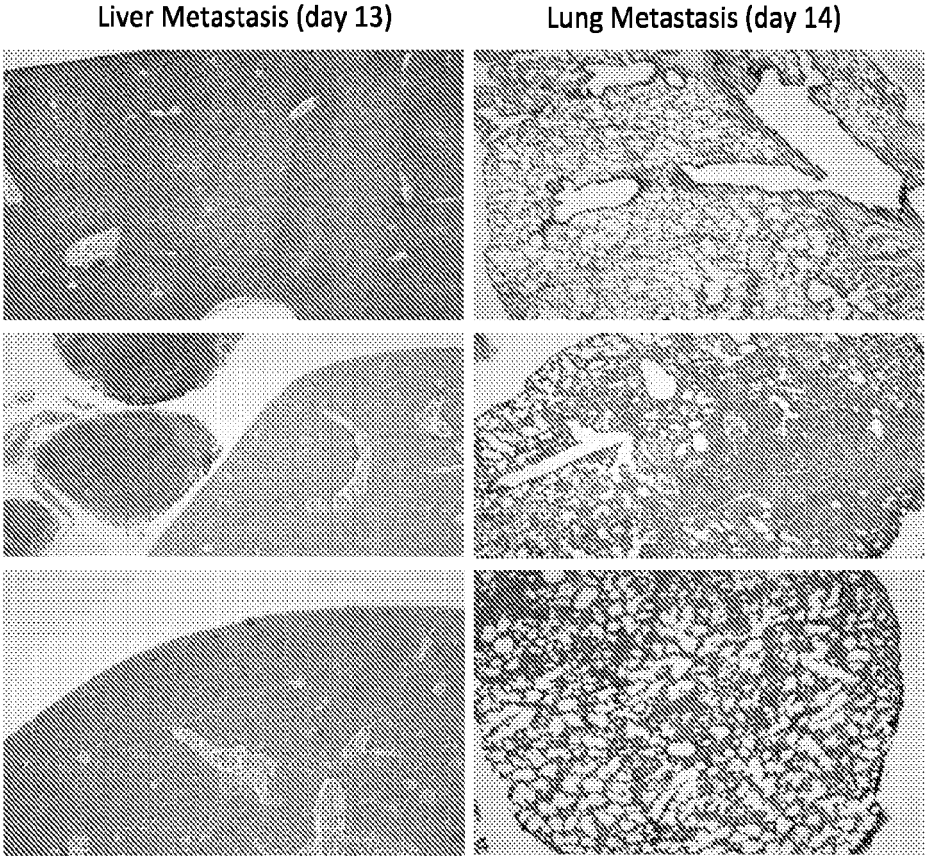


FIG. 10

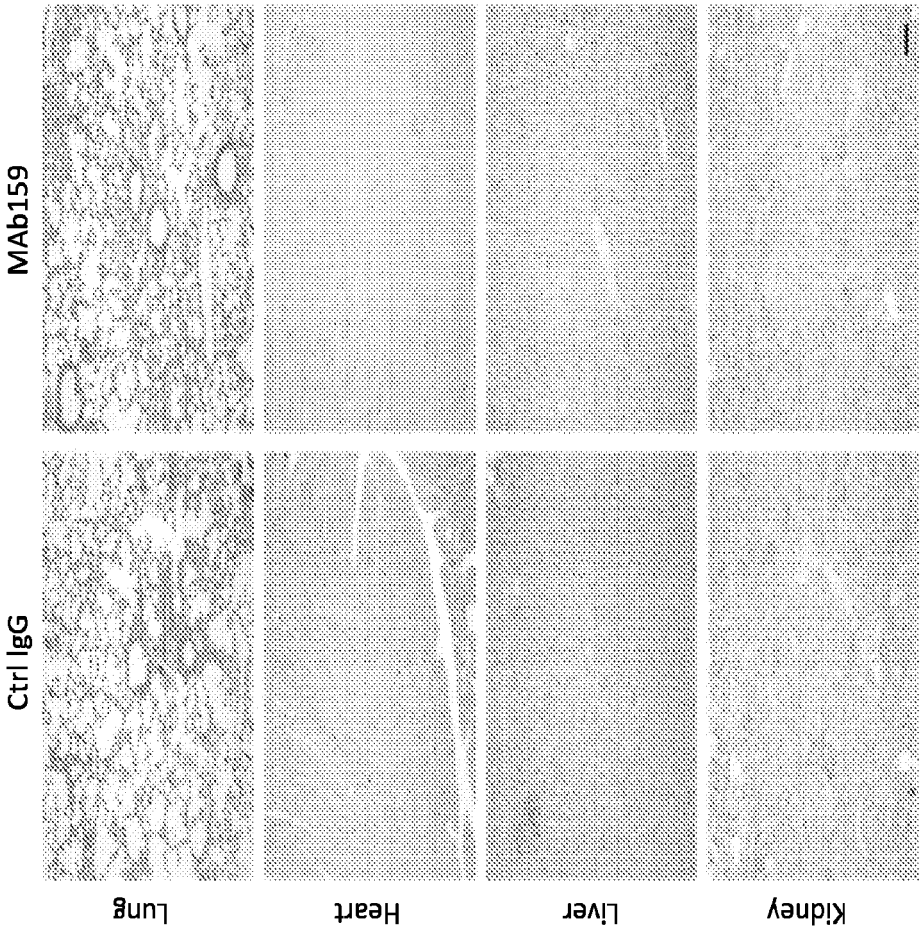


FIG. 11B

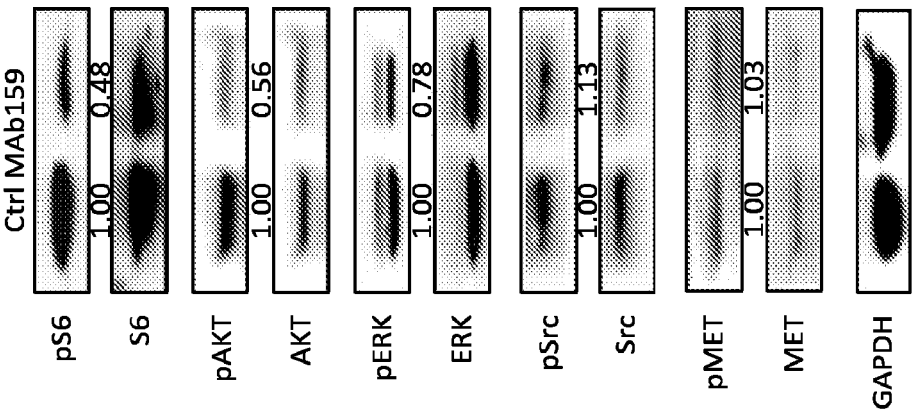


FIG. 11A

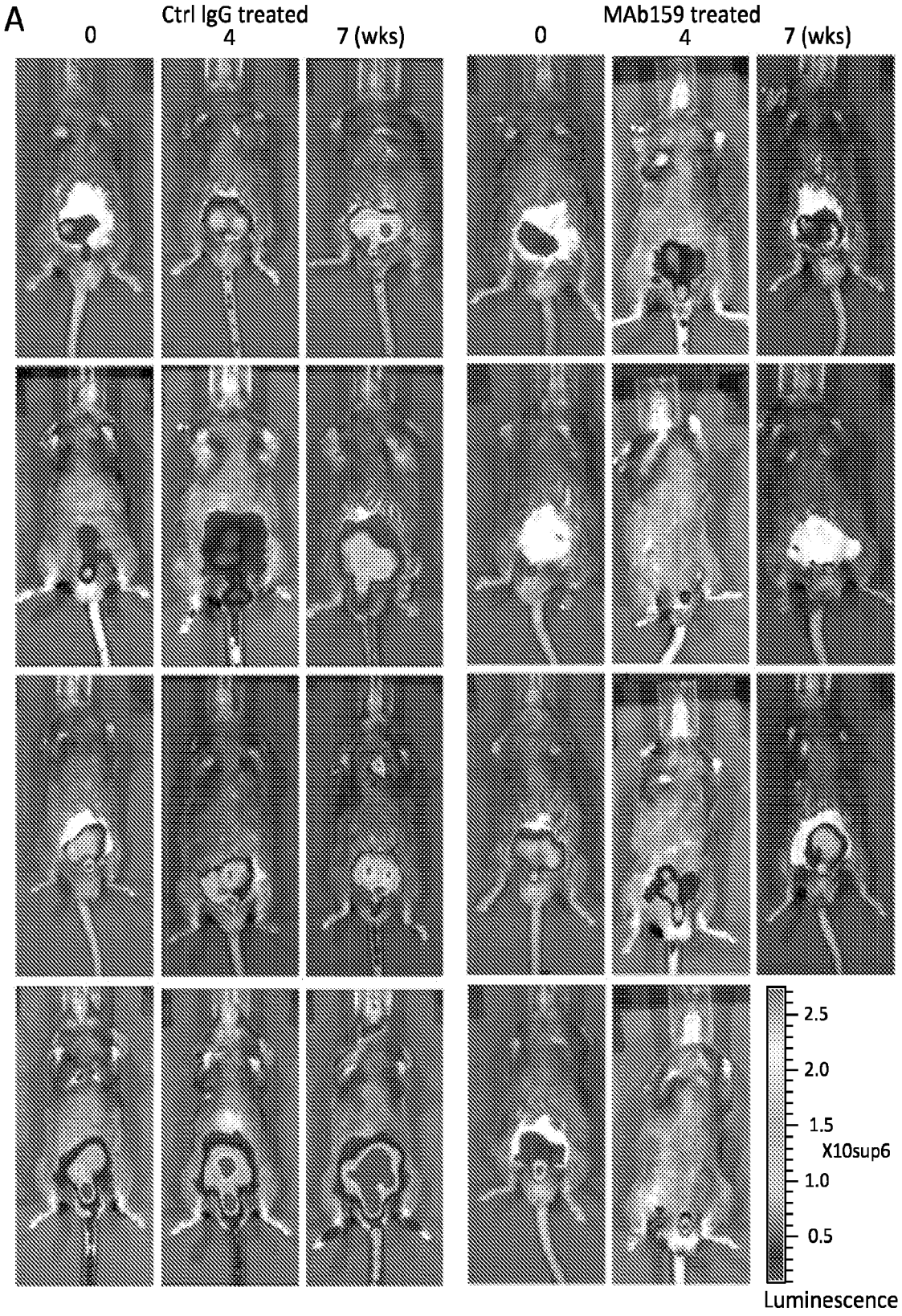

A
Ctrl IgG treated
0
4
7 (wks)
MAb159 treated
0
4
7 (wks)
2.5
2.0
1.5
X10sup6
1.0
0.5
Luminescence

FIG. 12A

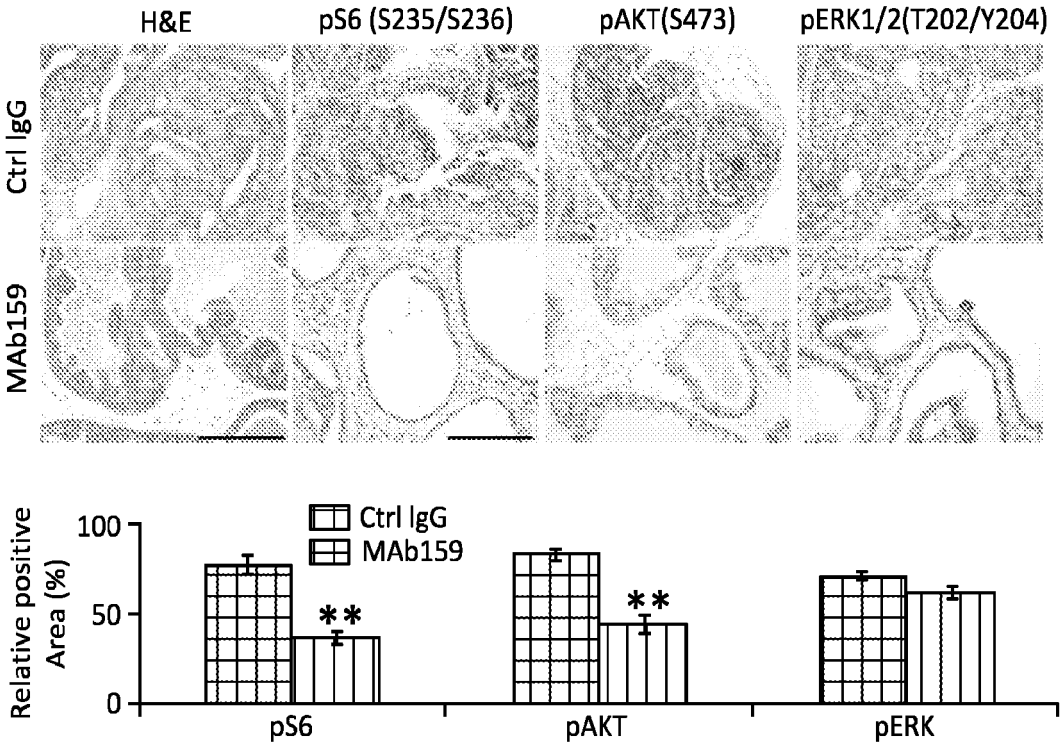


FIG. 12B

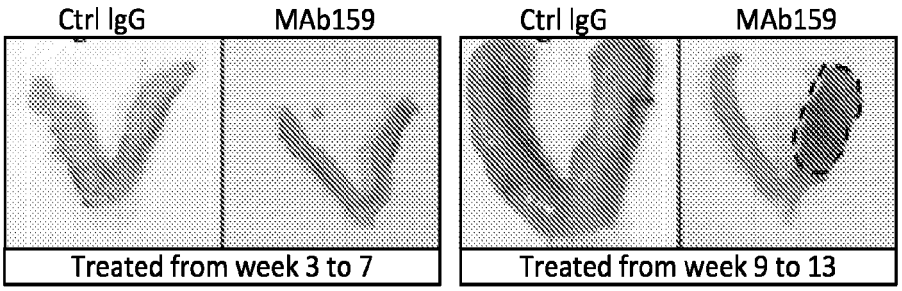


FIG. 12C

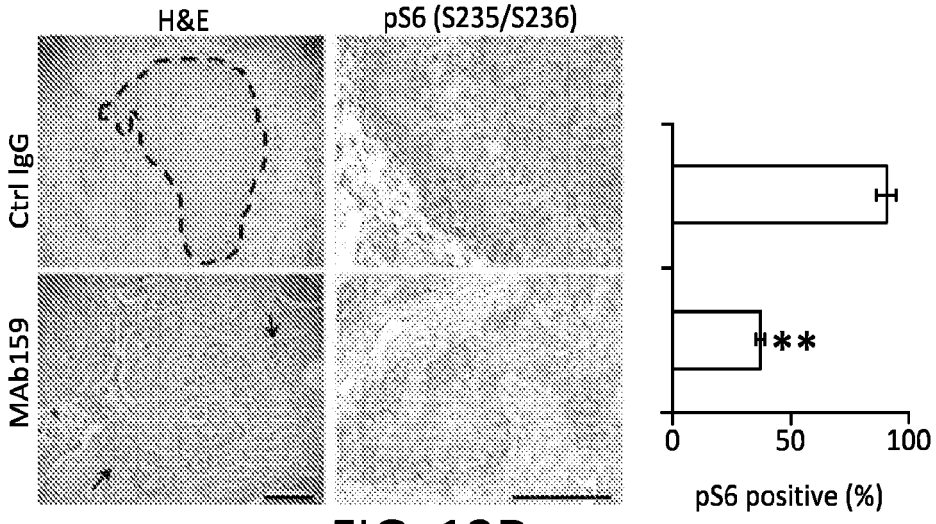


FIG. 12D

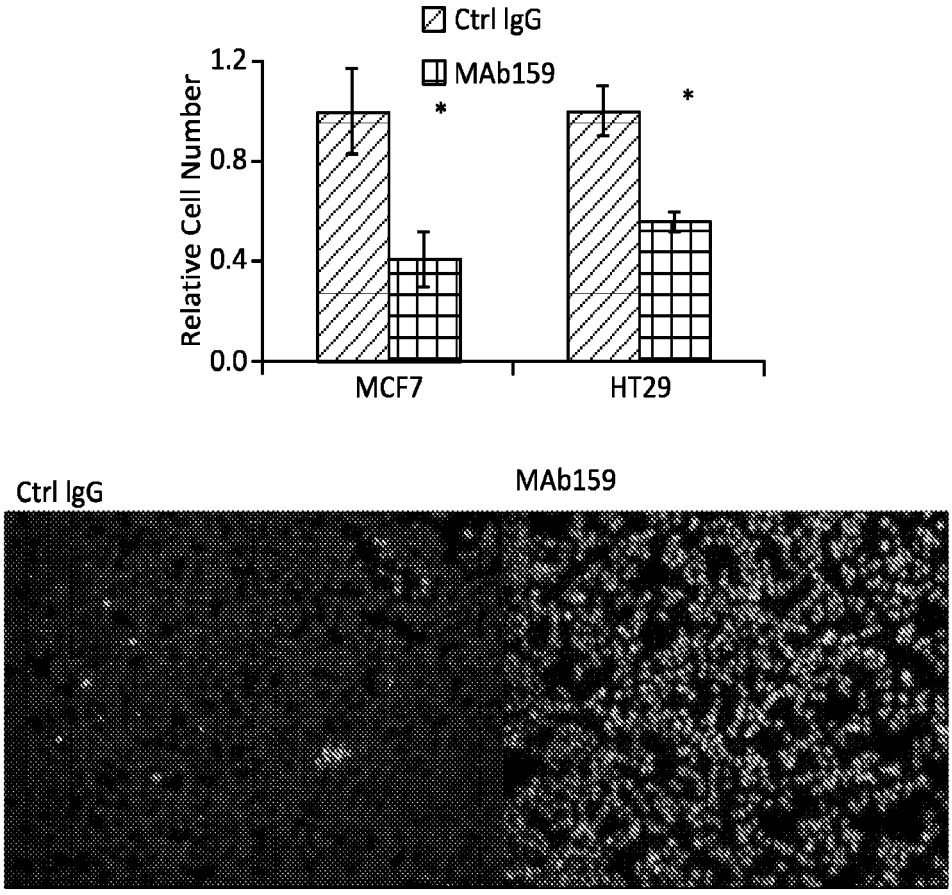


FIG. 13A

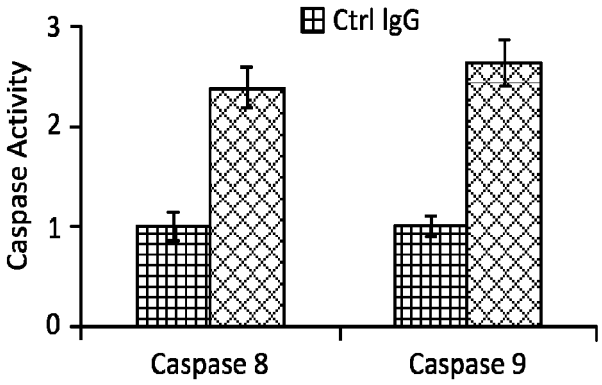
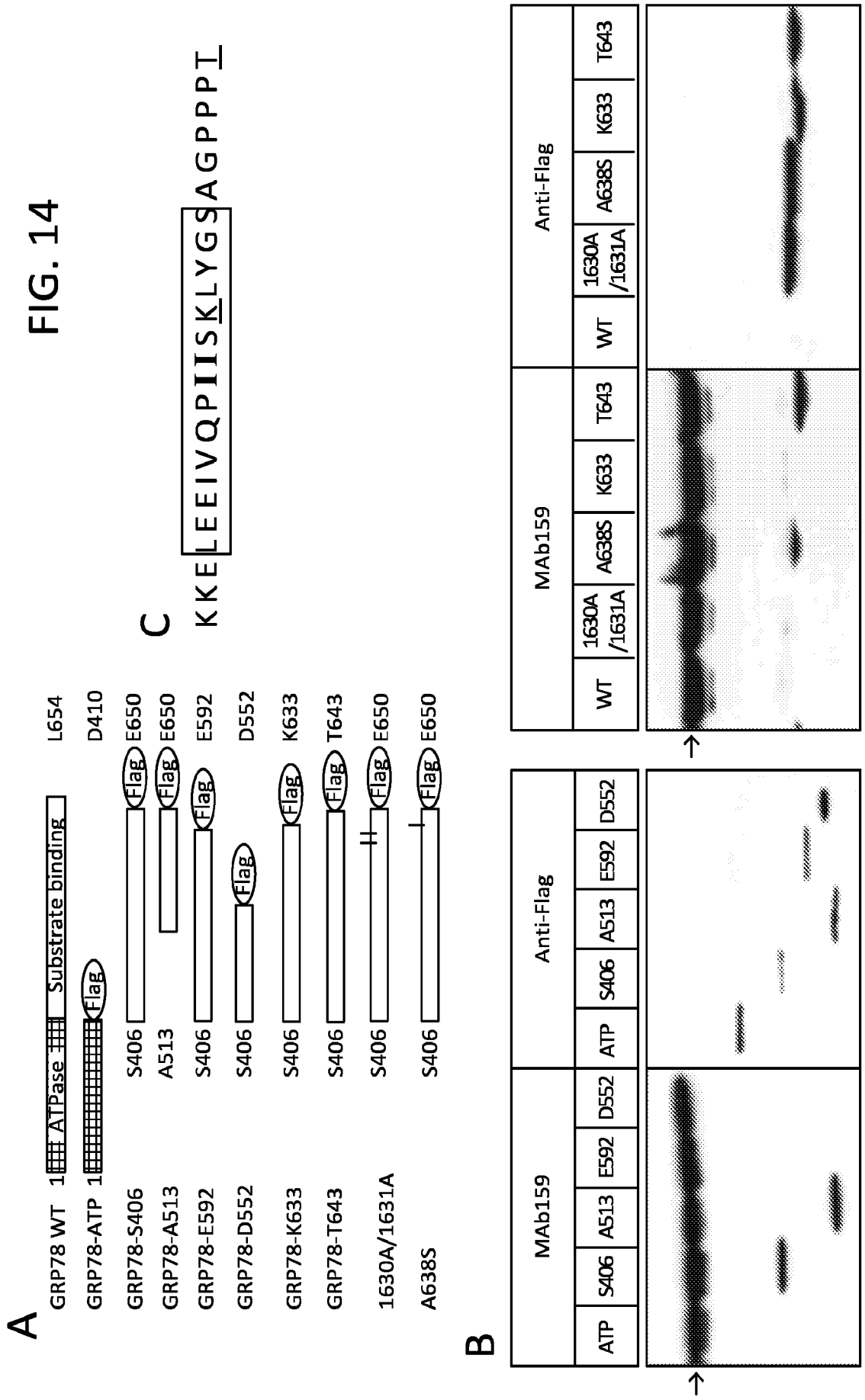


FIG. 13B

FIG. 14


A
GRP78 WT
ATPase
Substrate binding
L654
GRP78-ATP
D410
Flag
GRP78-S406
S406
E650
GRP78-A513
A513
E650
GRP78-E592
S406
E592
GRP78-D552
S406
D552
GRP78-K633
S406
K633
GRP78-T643
S406
T643
1630A/1631A
S406
E650
A638S
S406
E650
C
K K E L E E I V Q P I I S K L Y G S A G P P P T
B
MAb159
ATP
S406
A513
E592
D552
Anti-Flag
ATP
S406
A513
E592
D552
MAb159
WT
1630A /1631A
A638S
K633
T643
Anti-Flag
WT
1630A /1631A
A638S
K633
T643

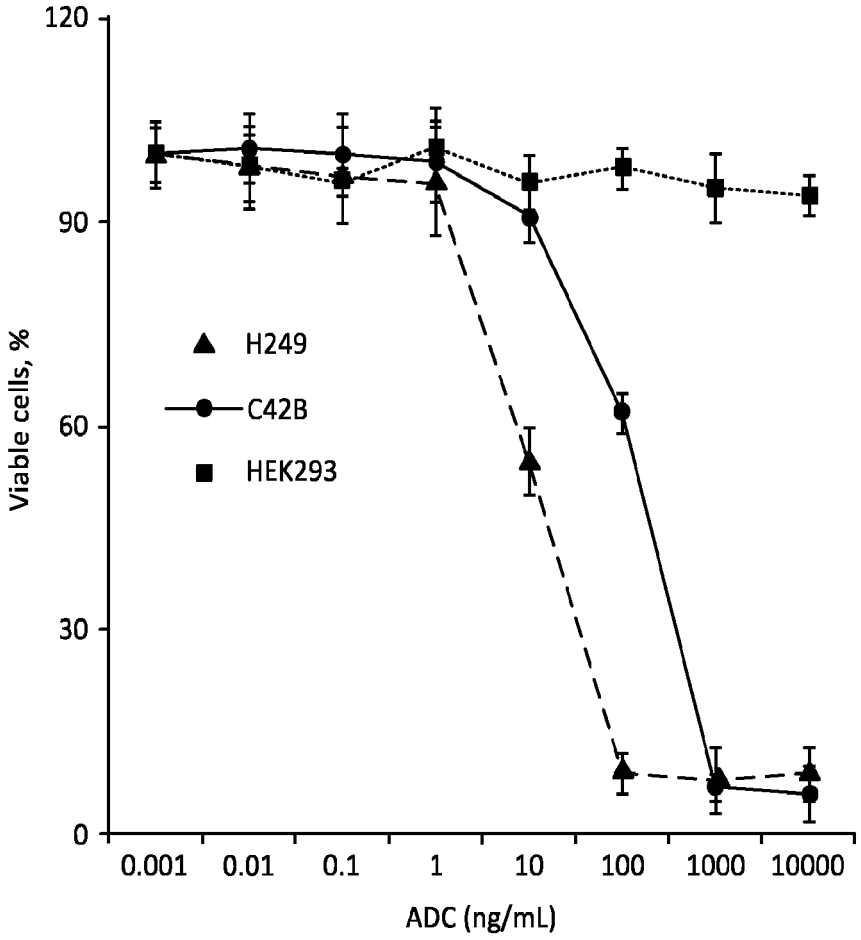

120
90
60
30
0
Viable cells, %
H249
C42B
HEK293
0.001
0.01
0.1
1
10
100
1000
10000
ADC (ng/mL)

FIG. 15