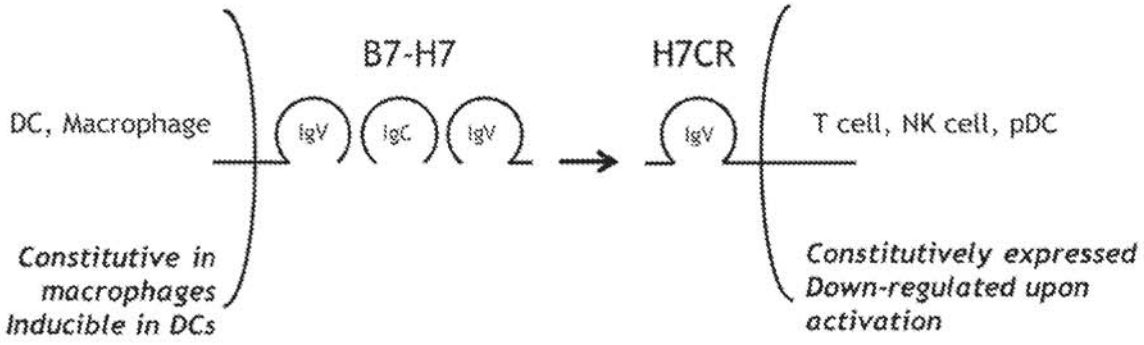

B7-H7
H7CR
DC, Macrophage
IgV
IgC
IgV
IgV
T cell, NK cell, pDC
Constitutive in
macrophages
Inducible in DCs
Constitutively expressed
Down-regulated upon
activation

FIG. 1

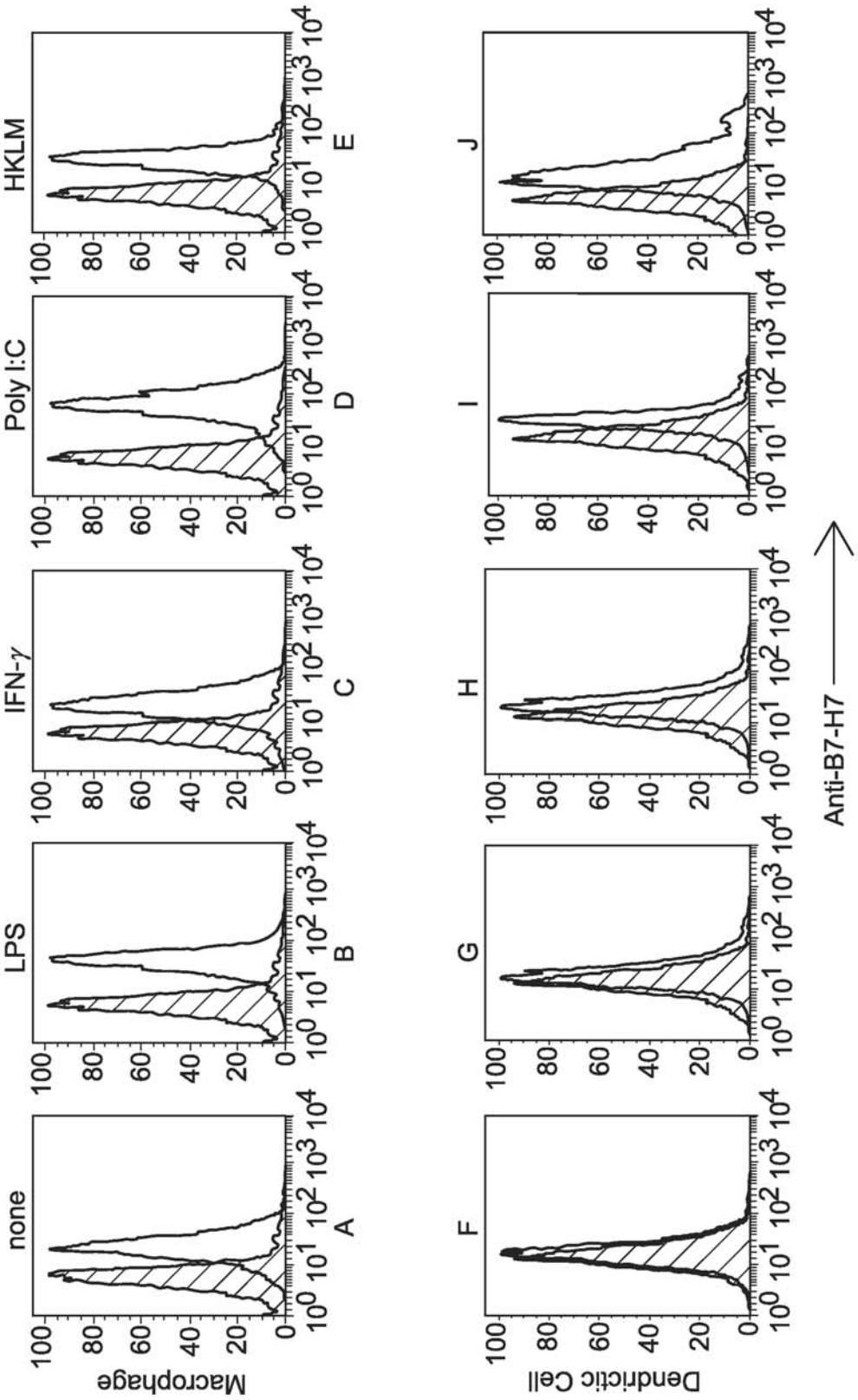
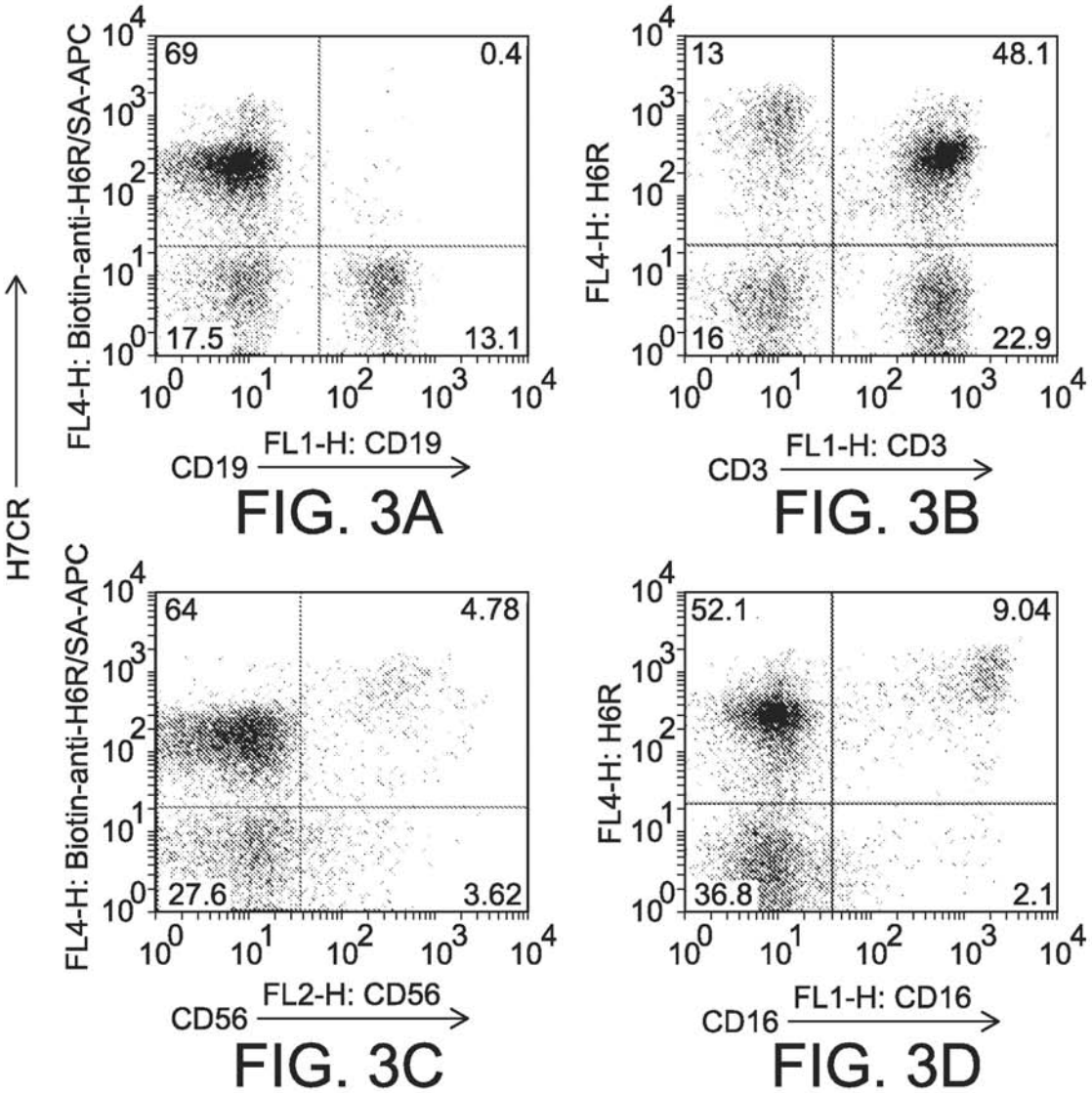

none
LPS
IFN-γ
Poly I:C
HKLM
Macrophage
Dendritic Cell
A
B
C
D
E
F
G
H
I
J
Anti-B7-H7

FIG. 2


H7CR
FL4-H: Biotin-anti-H6R/SA-APC
69
0.4
17.5
13.1
CD19
FL1-H: CD19
FIG. 3A
FL4-H: H6R
13
48.1
16
22.9
CD3
FL1-H: CD3
FIG. 3B
FL4-H: Biotin-anti-H6R/SA-APC
64
4.78
27.6
3.62
CD56
FL2-H: CD56
FIG. 3C
FL4-H: H6R
52.1
9.04
36.8
2.1
CD16
FL1-H: CD16
FIG. 3D

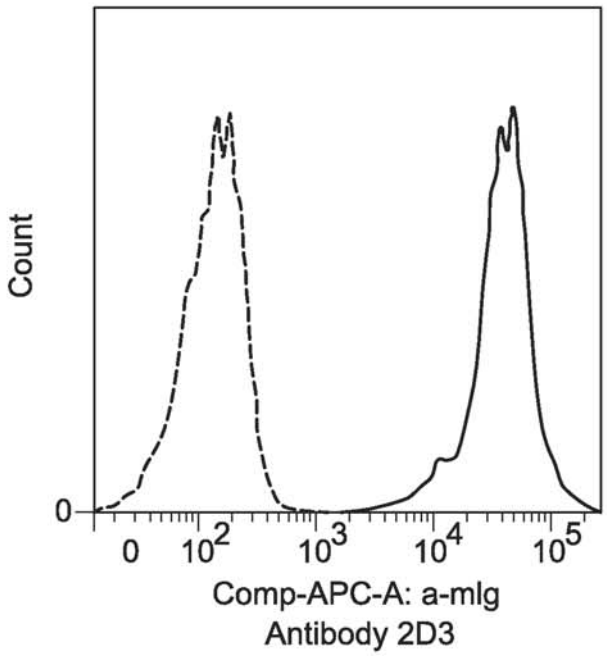

Count
0
0
$10^2$
$10^3$
$10^4$
$10^5$
Comp-APC-A: a-mlg
Antibody 2D3

FIG. 4A

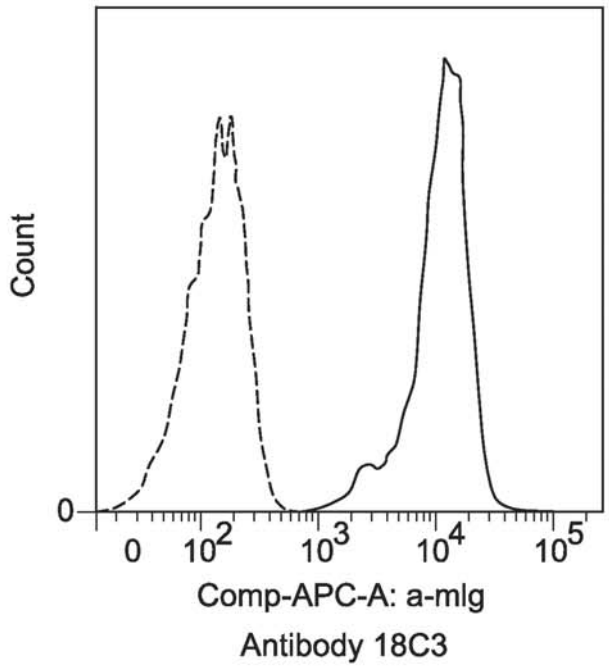

Count
0
0
$10^2$
$10^3$
$10^4$
$10^5$
Comp-APC-A: a-mlg
Antibody 18C3

FIG. 4B

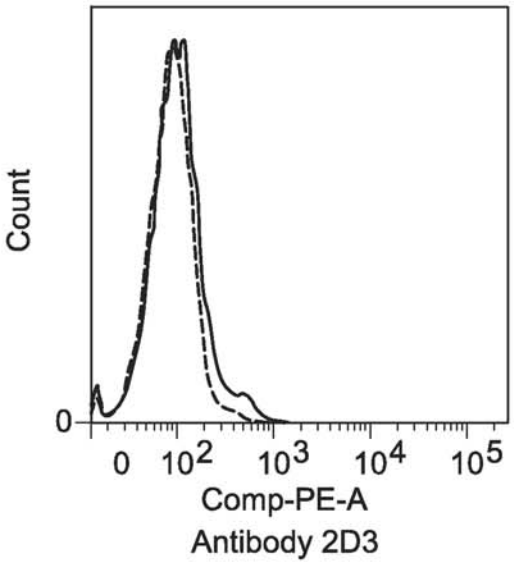



FIG. 5A

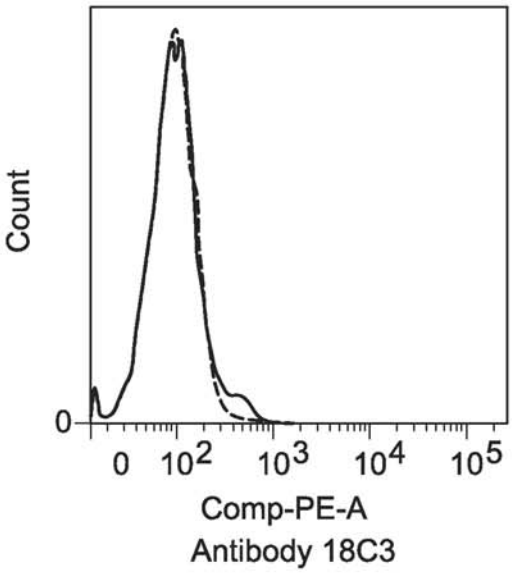



FIG. 5B

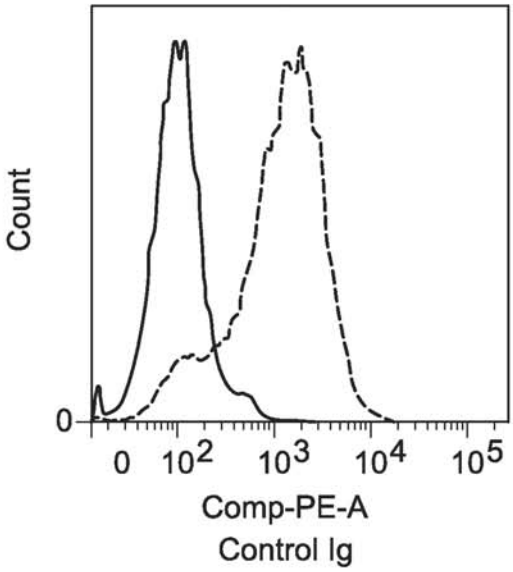



FIG. 5C

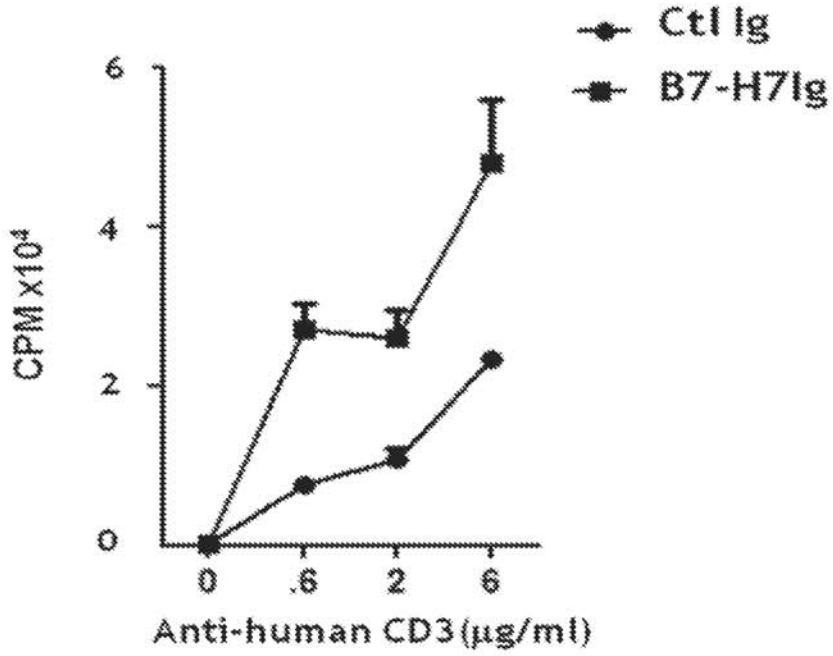

Ctl Ig
B7-H7Ig
CPM X10⁴
6
4
2
0
0
.6
2
6
Anti-human CD3 (μg/ml)

FIG. 6

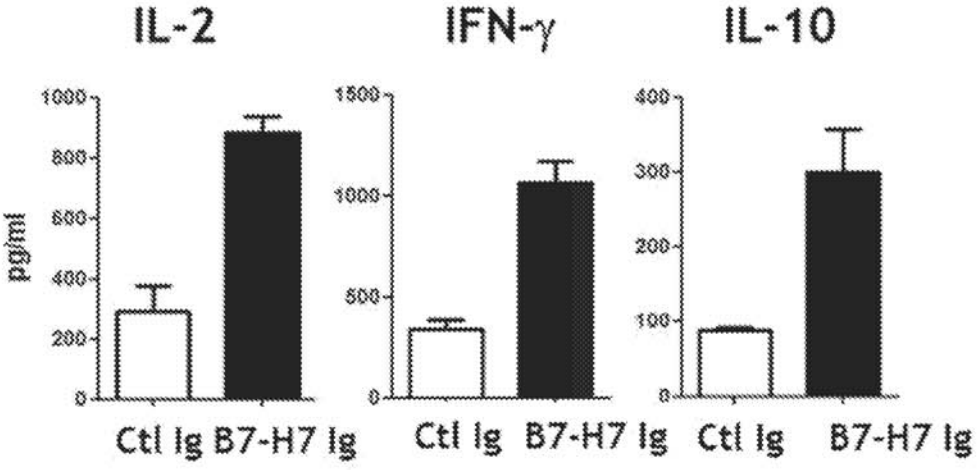

IL-2
IFN-γ
IL-10
pg/ml
1000
800
600
400
200
0
1500
1000
500
0
400
300
200
100
0
Ctl Ig
B7-H7 Ig
Ctl Ig
B7-H7 Ig
Ctl Ig
B7-H7 Ig

FIG. 7

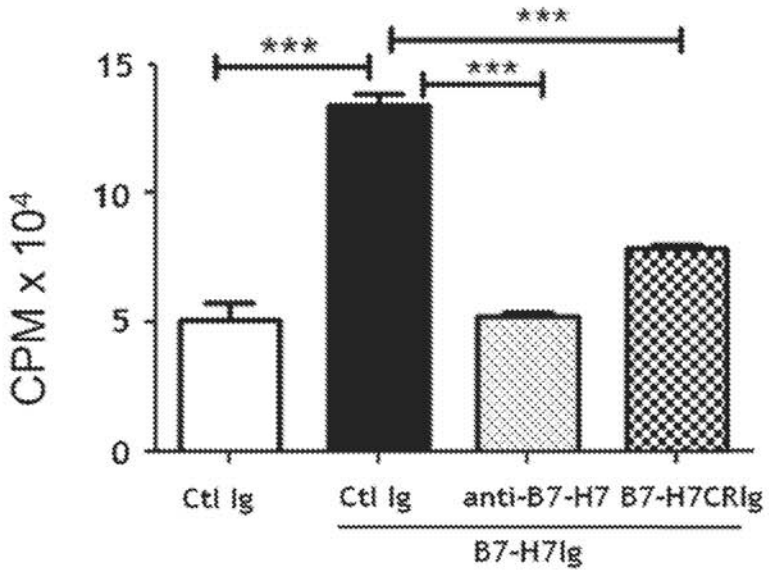

***
***
***
15
10
5
0
CPM x 10⁴
Ctl Ig
Ctl Ig
anti-B7-H7
B7-H7CRIg
B7-H7Ig

FIG. 8

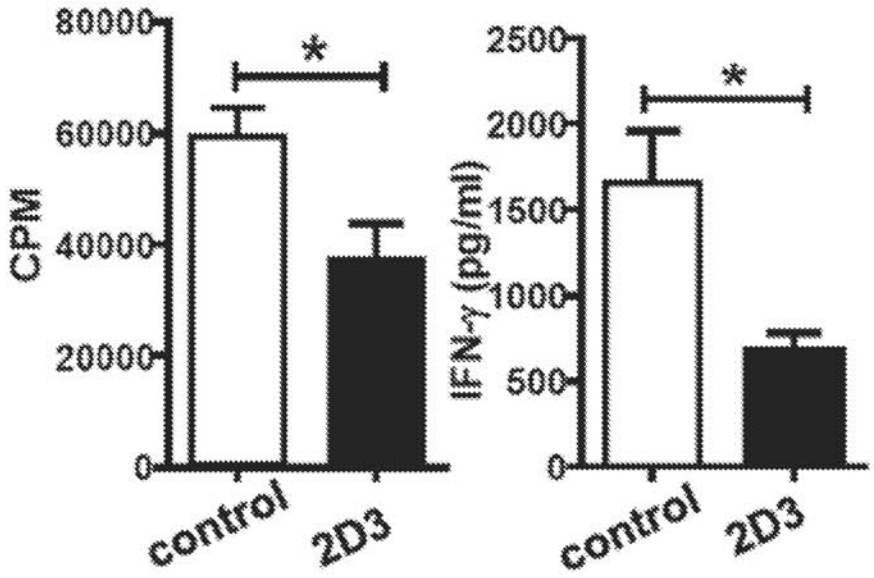

80000
60000
40000
20000
0
CPM
*
control
2D3
2500
2000
1500
1000
500
0
IFN-γ (pg/ml)
*
control
2D3

FIG. 9

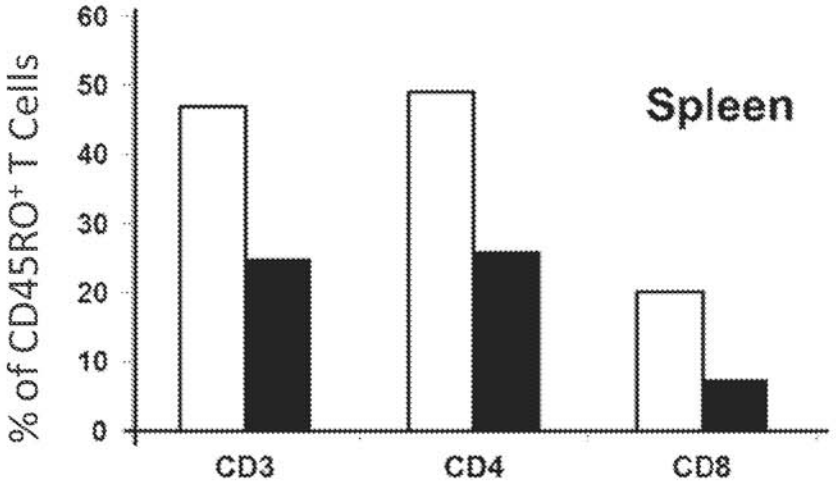



Figure 10A

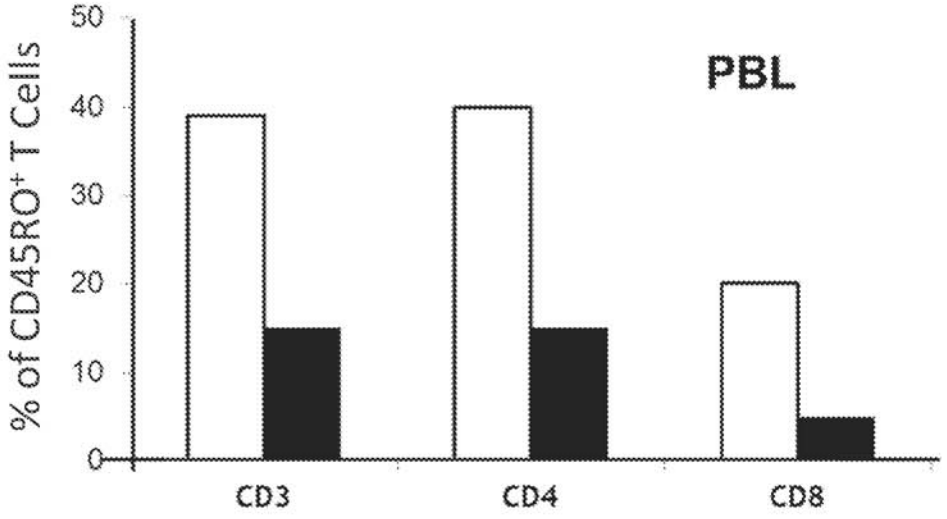
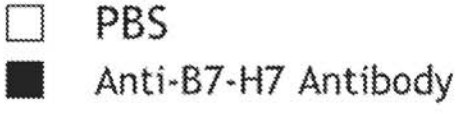



Figure 10B



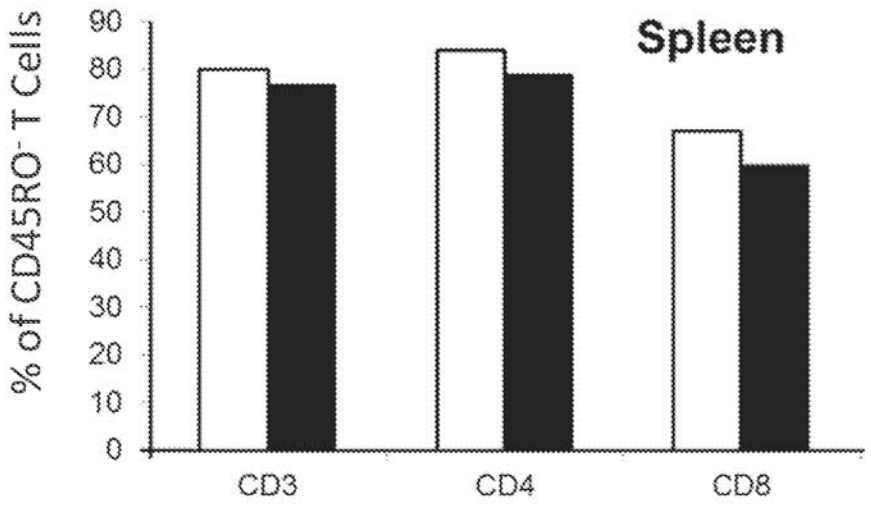



Figure 11A

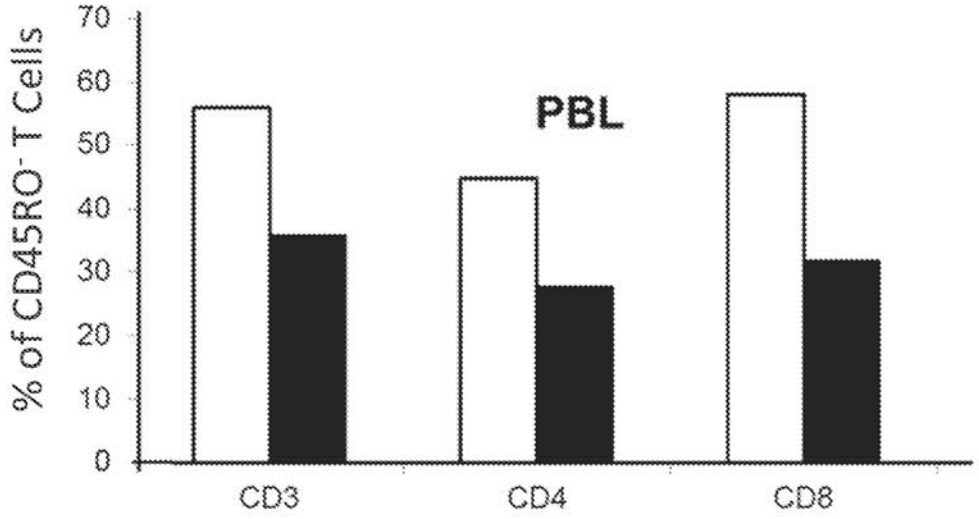
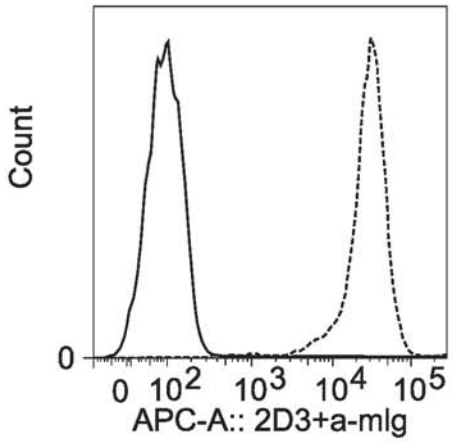



Figure 11B

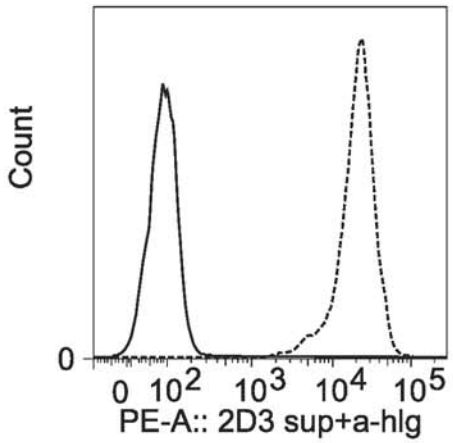
PBS

Anti-B7-H7 Antibody



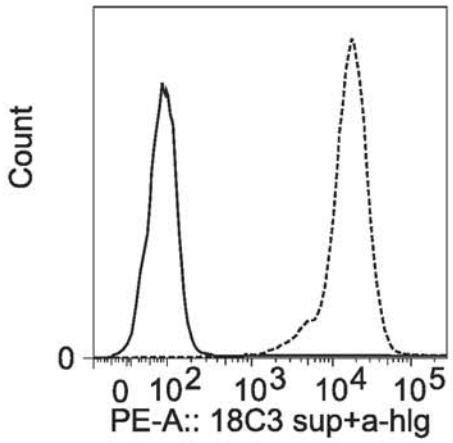

Purified Anti-Human B7-H7 Antibody 2D3

FIG. 12A




Recombinant Anti-Human B7-H7 Chimeric Antibody 2D3 (hIgG4)

FIG. 12B




Recombinant Anti-Human B7-H7 Chimeric Antibody 18C3 (hIgG4)

FIG. 12C

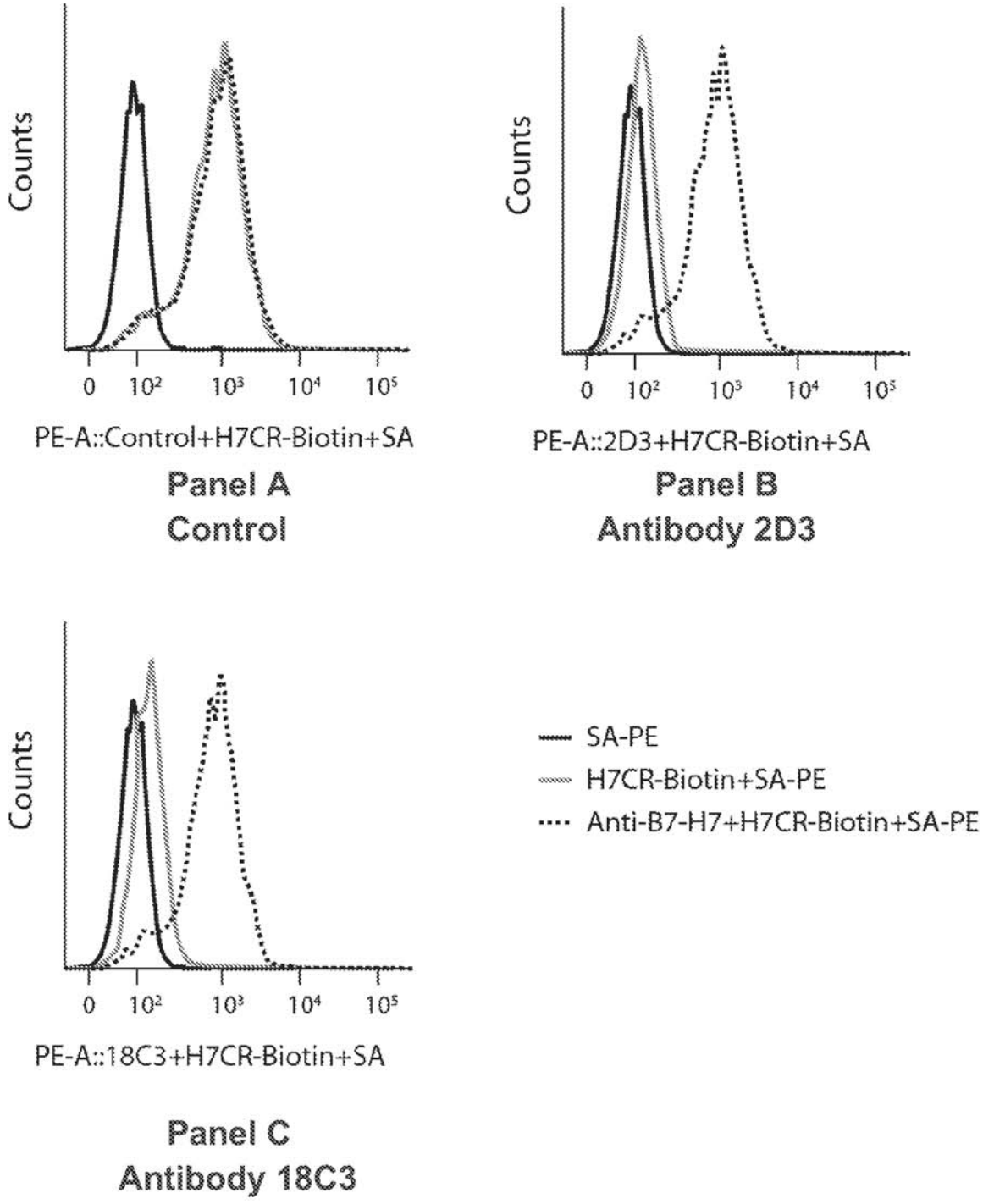

Counts
0
10²
10³
10⁴
10⁵
PE-A::Control+H7CR-Biotin+SA
Panel A
Control
Counts
0
10²
10³
10⁴
10⁵
PE-A::2D3+H7CR-Biotin+SA
Panel B
Antibody 2D3
Counts
0
10²
10³
10⁴
10⁵
PE-A::18C3+H7CR-Biotin+SA
Panel C
Antibody 18C3
SA-PE
H7CR-Biotin+SA-PE
Anti-B7-H7+H7CR-Biotin+SA-PE

FIG. 13

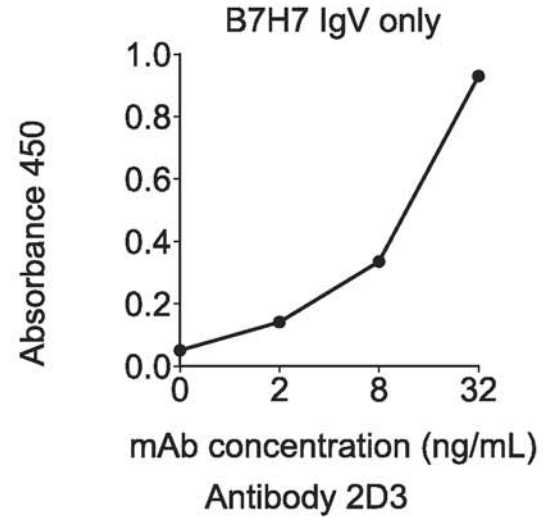



FIG. 14A

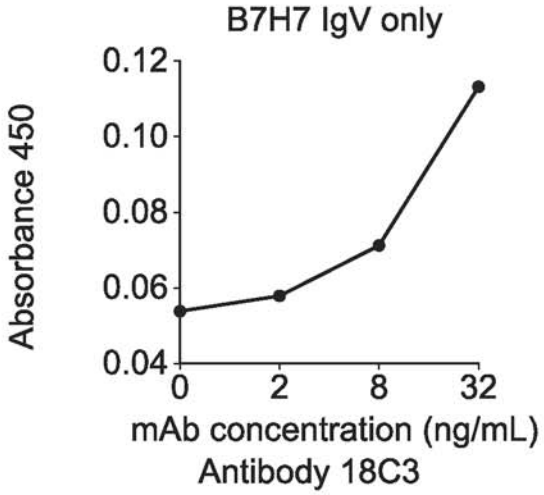



FIG. 14B

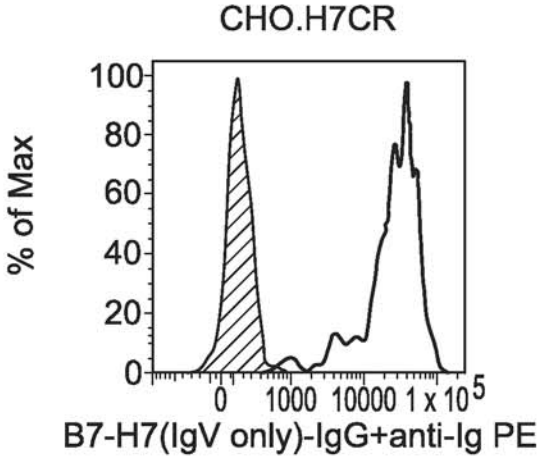



FIG. 14C

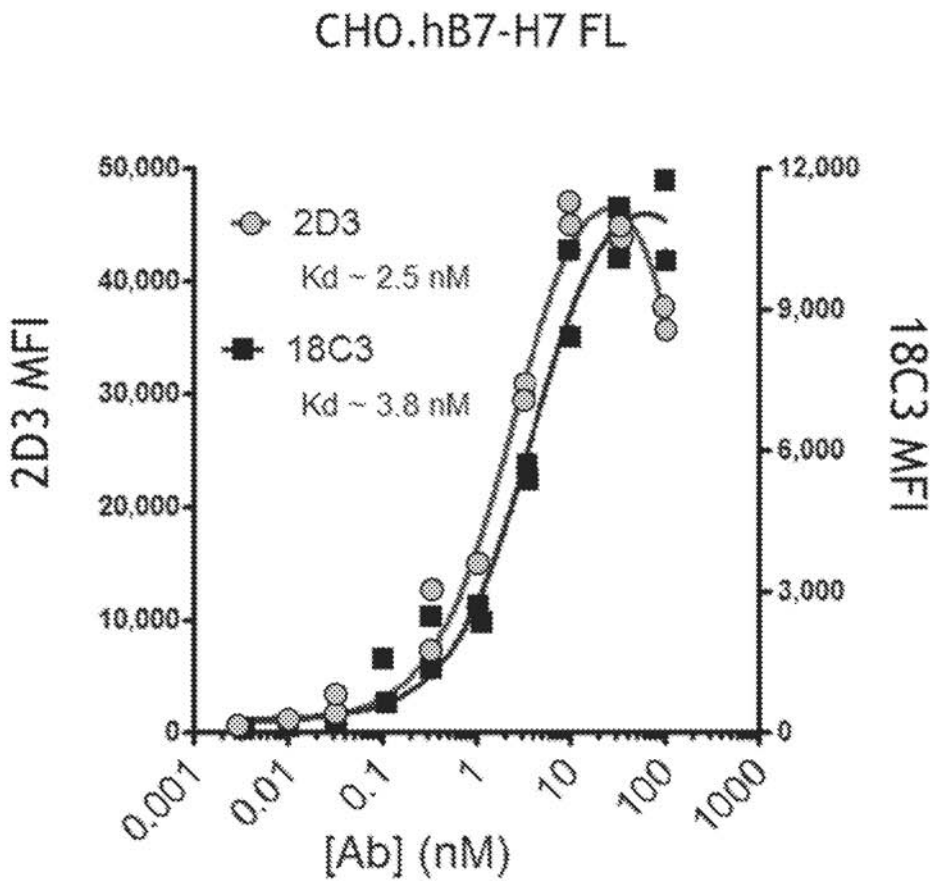
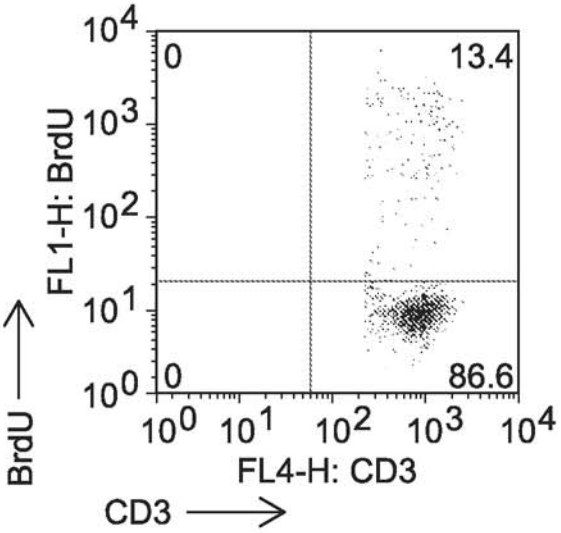
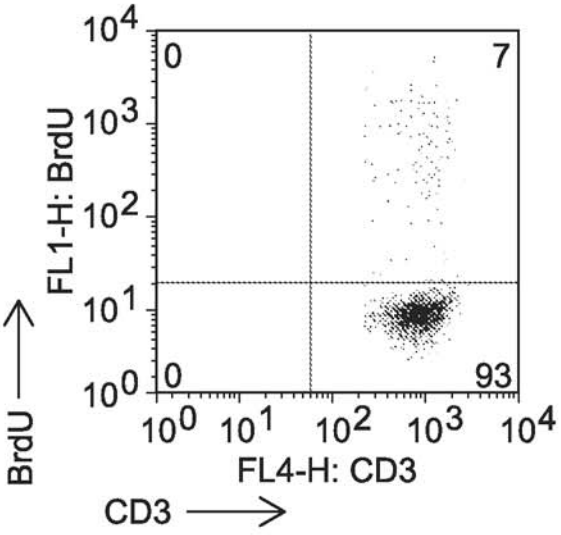

CHO.hB7-H7 FL
2D3 MFI
18C3 MFI
50,000
40,000
30,000
20,000
10,000
0
12,000
9,000
6,000
3,000
0
2D3
Kd ~ 2.5 nM
18C3
Kd ~ 3.8 nM
0.001
0.01
0.1
1
10
100
1000
[Ab] (nM)

FIG. 15

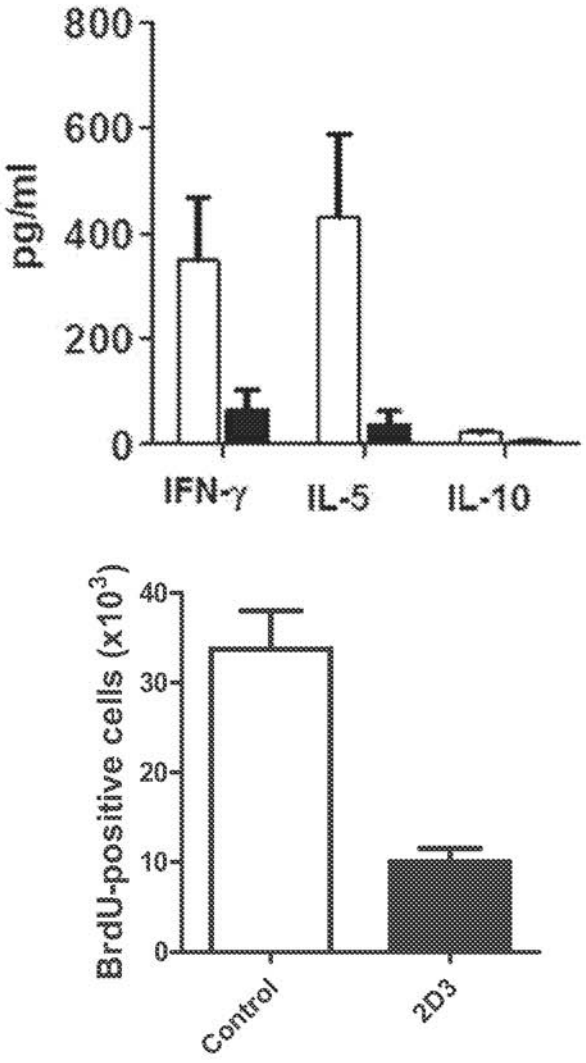



Panel A: Control




Panel B: Antibody 2D3

FIG. 16A




Panel A: Cytokine Levels

Panel B: BrdU-Positive Cells

FIG. 16B

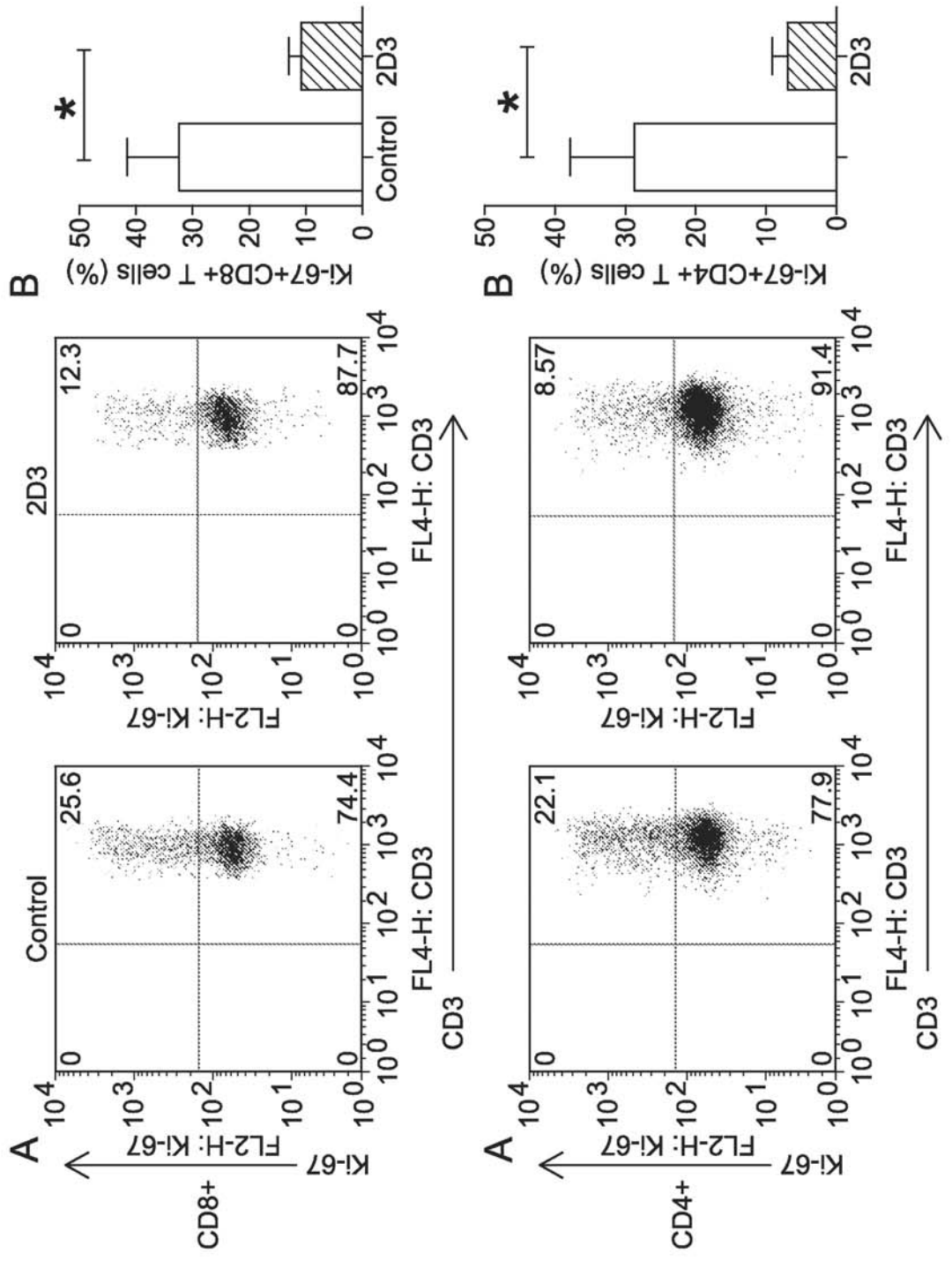

A
Control
2D3
25.6
74.4
12.3
87.7
CD8+
Ki-67
FL2-H: Ki-67
FL4-H: CD3
CD3
B
Ki-67+CD8+ T cells (%)
Control
2D3
*
A
Control
2D3
22.1
77.9
8.57
91.4
CD4+
Ki-67
FL2-H: Ki-67
FL4-H: CD3
CD3
B
Ki-67+CD4+ T cells (%)
Control
2D3
*

FIG. 17A-B

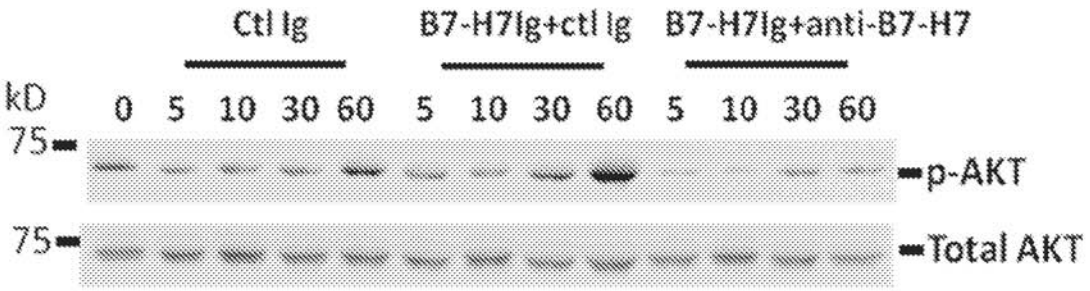

Ctl Ig
B7-H7Ig+ctl Ig
B7-H7Ig+anti-B7-H7
kD
0 5 10 30 60 5 10 30 60 5 10 30 60
75
p-AKT
75
Total AKT

FIG. 18

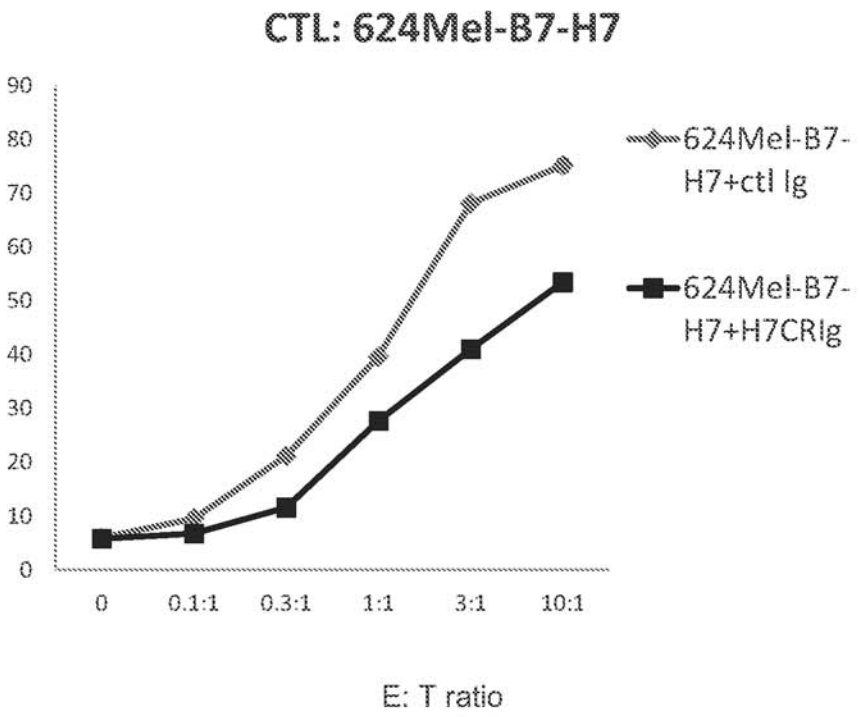

CTL: 624Mel-B7-H7
90
80
70
60
50
40
30
20
10
0
0
0.1:1
0.3:1
1:1
3:1
10:1
624Mel-B7-H7+ctl Ig
624Mel-B7-H7+H7CRIg
E: T ratio

FIG. 19

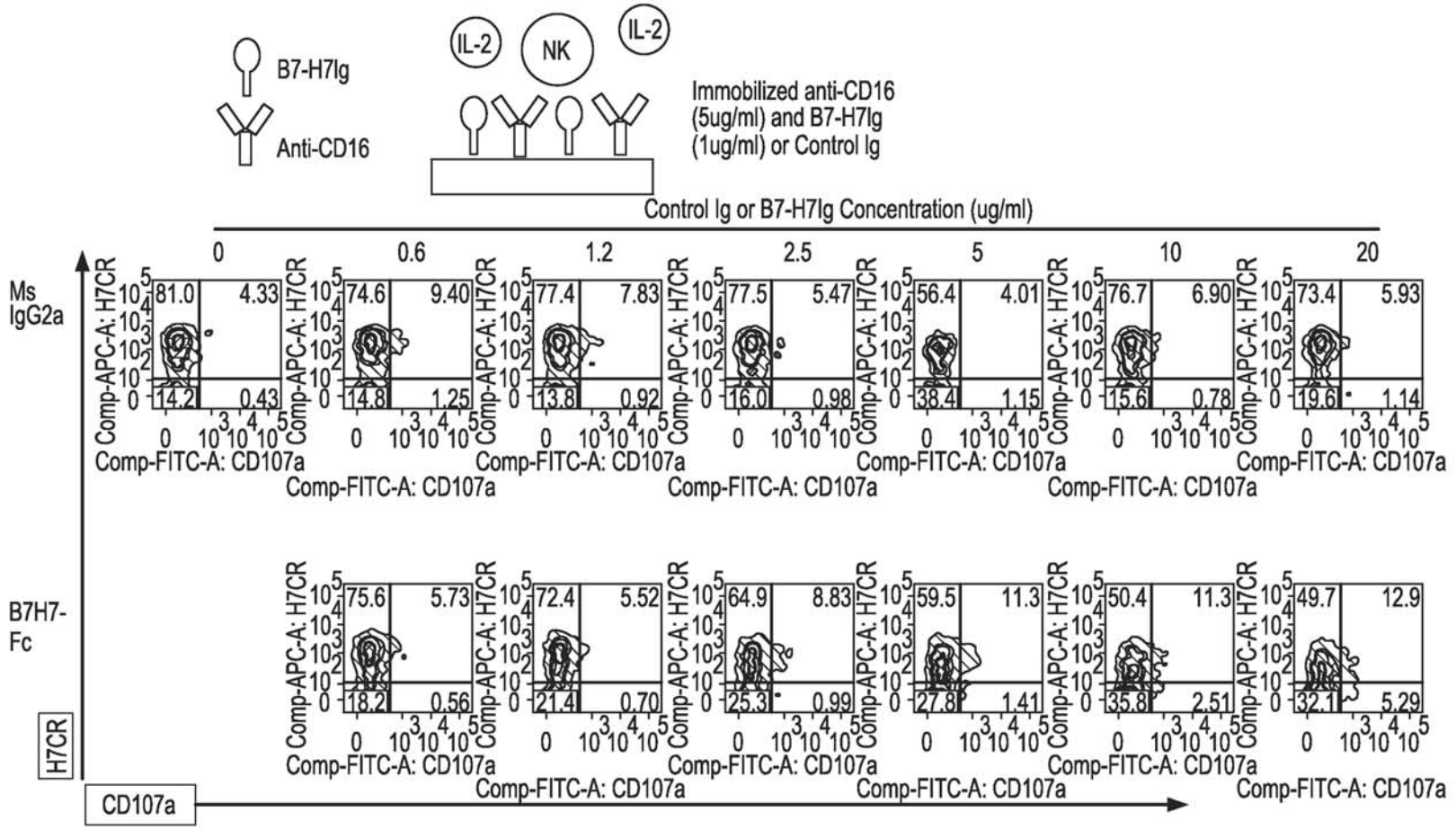

B7-H7Ig
Anti-CD16
IL-2
NK
IL-2
Immobilized anti-CD16
(5ug/ml) and B7-H7Ig
(1ug/ml) or Control Ig
Control Ig or B7-H7Ig Concentration (ug/ml)
0
0.6
1.2
2.5
5
10
20
Ms
IgG2a
B7H7-
Fc
H7CR
CD107a
Comp-APC-A: H7CR
Comp-FITC-A: CD107a
81.0
4.33
14.2
0.43
74.6
9.40
14.8
1.25
77.4
7.83
13.8
0.92
77.5
5.47
16.0
0.98
56.4
4.01
38.4
1.15
76.7
6.90
15.6
0.78
73.4
5.93
19.6
1.14
75.6
5.73
18.2
0.56
72.4
5.52
21.4
0.70
64.9
8.83
25.3
0.99
59.5
11.3
27.8
1.41
50.4
11.3
35.8
2.51
49.7
12.9
32.1
5.29

FIG. 20A

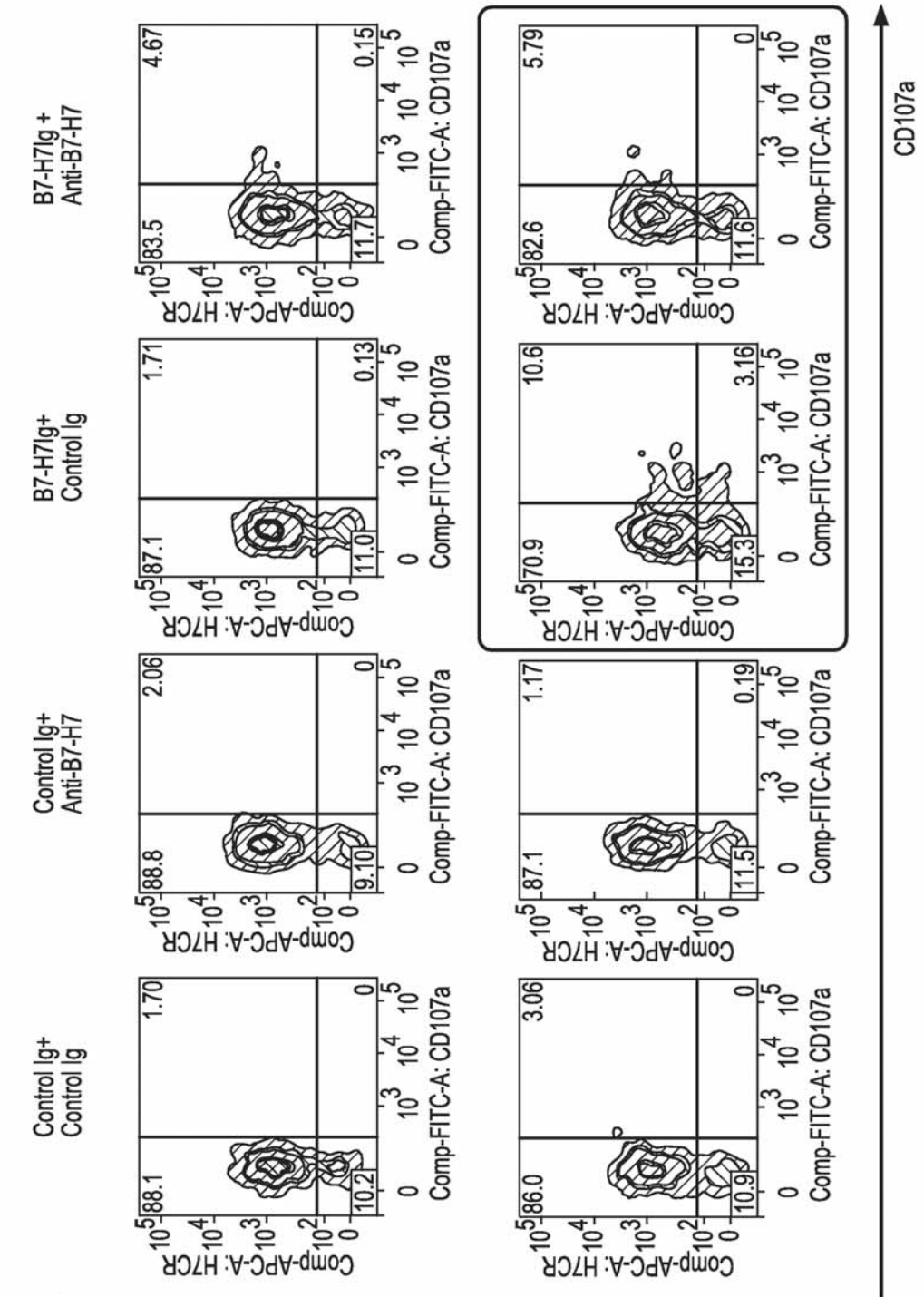

Immobilized:
Soluble:
Control Ig
Control Ig+
Control Ig
Control Ig+
Anti-B7-H7
B7-H7Ig+
Control Ig
B7-H7Ig +
Anti-B7-H7
CD16
H7CR
Control Ig
CD107a
Comp-APC-A: H7CR
Comp-FITC-A: CD107a
10.2
88.1
1.70
0
9.10
88.8
2.06
0
10.9
86.0
3.06
0
11.5
87.1
1.17
0.19
11.0
87.1
1.71
0.13
15.3
70.9
10.6
3.16
11.7
83.5
4.67
0.15
11.6
82.6
5.79
0

FIG. 20B