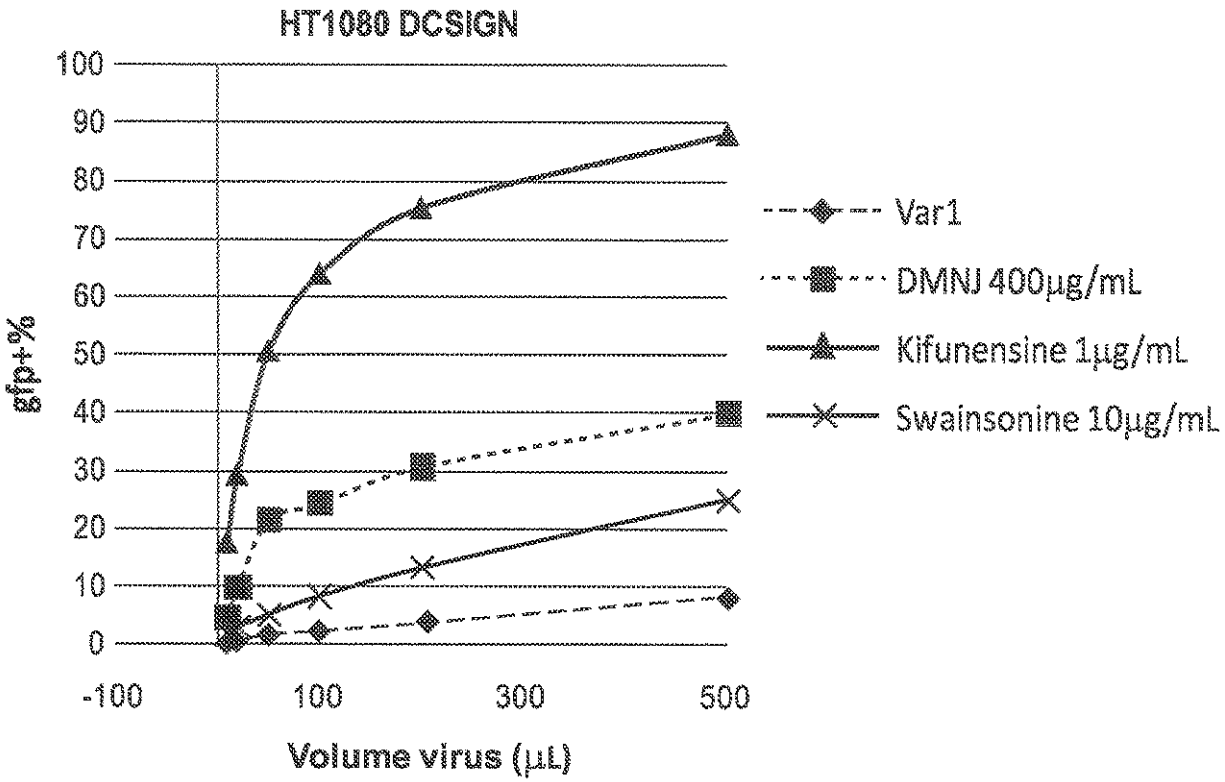

HT1080 DCSIGN
100
90
80
70
60
50
40
30
20
10
0
gfp+%
-100
100
300
500
Volume virus (µL)
Var1
DMNJ 400µg/mL
Kifunensine 1µg/mL
Swainsonine 10µg/mL

FIG. 1A

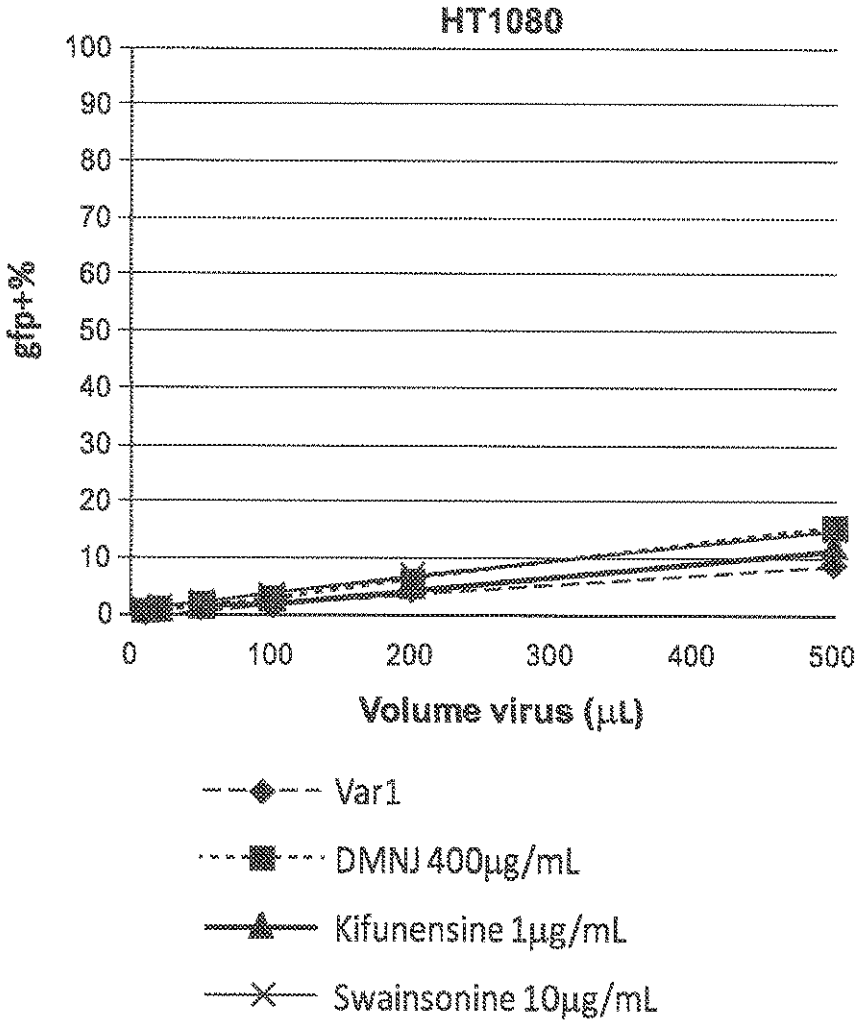

HT1080
100
90
80
70
60
50
40
30
20
10
0
gfp+%
0
100
200
300
400
500
Volume virus (µL)
Var1
DMNJ 400µg/mL
Kifunensine 1µg/mL
Swainsonine 10µg/mL

FIG. 1B

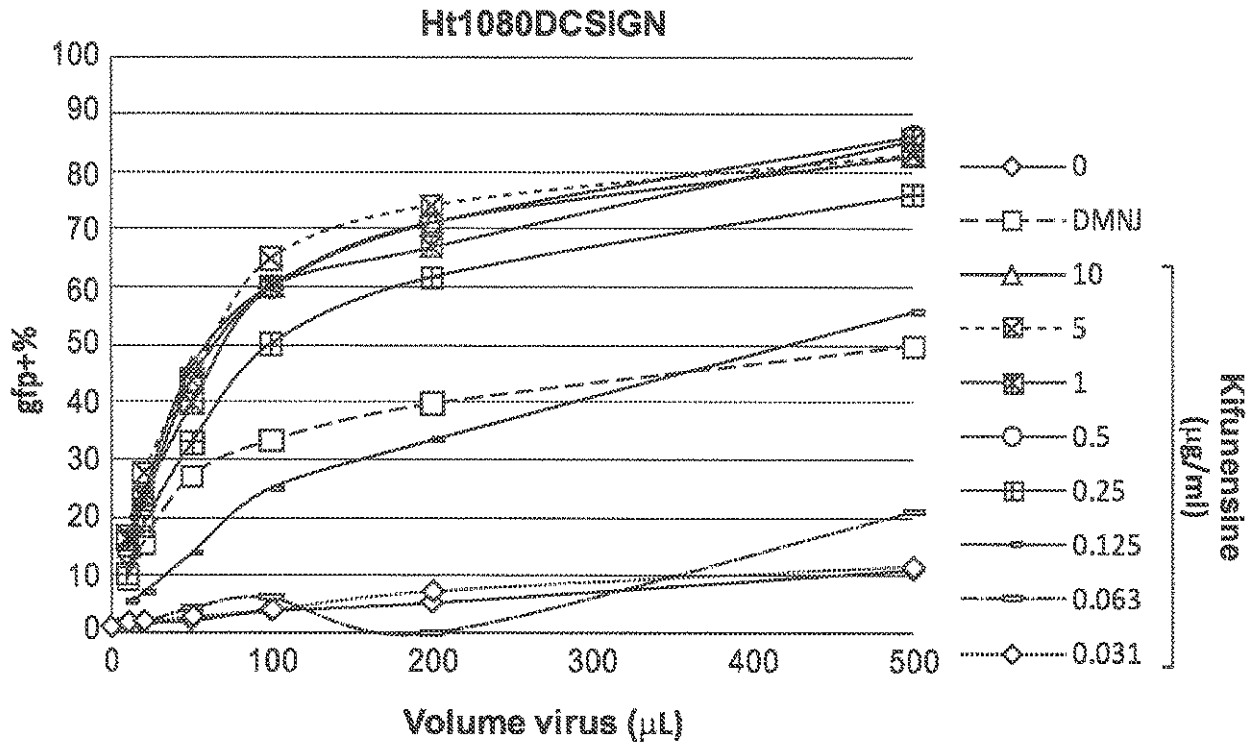

Ht1080DCSIGN
gfp+%
100
90
80
70
60
50
40
30
20
10
0
0
100
200
300
400
500
Volume virus (µL)
0
DMNJ
10
5
1
0.5
0.25
0.125
0.063
0.031
Kifunensine (µg/ml)

FIG. 2A

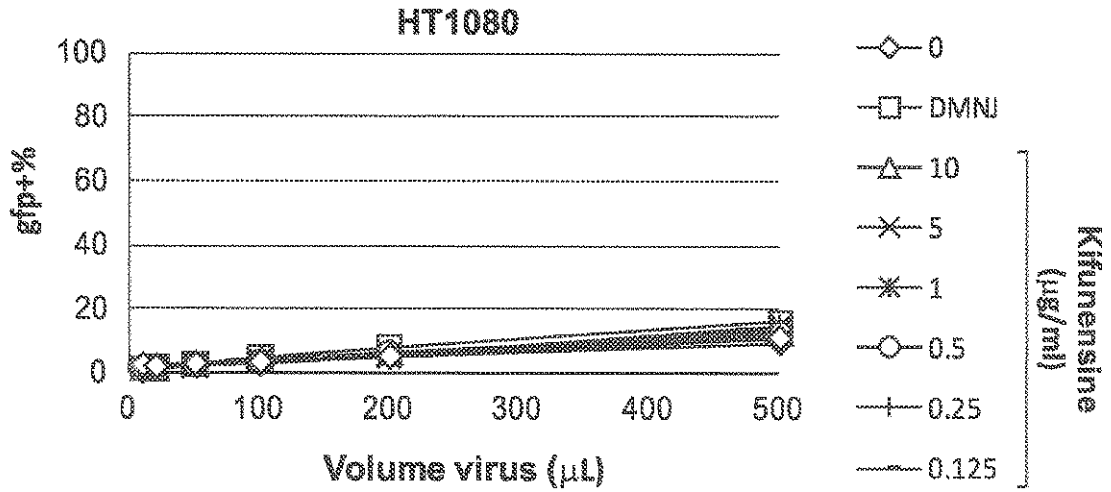

HT1080
gfp++%
100
80
60
40
20
0
0
100
200
300
400
500
Volume virus (µL)
0
DMNJ
10
5
1
0.5
0.25
0.125
Kifunensine (µg/ml)

FIG. 2B

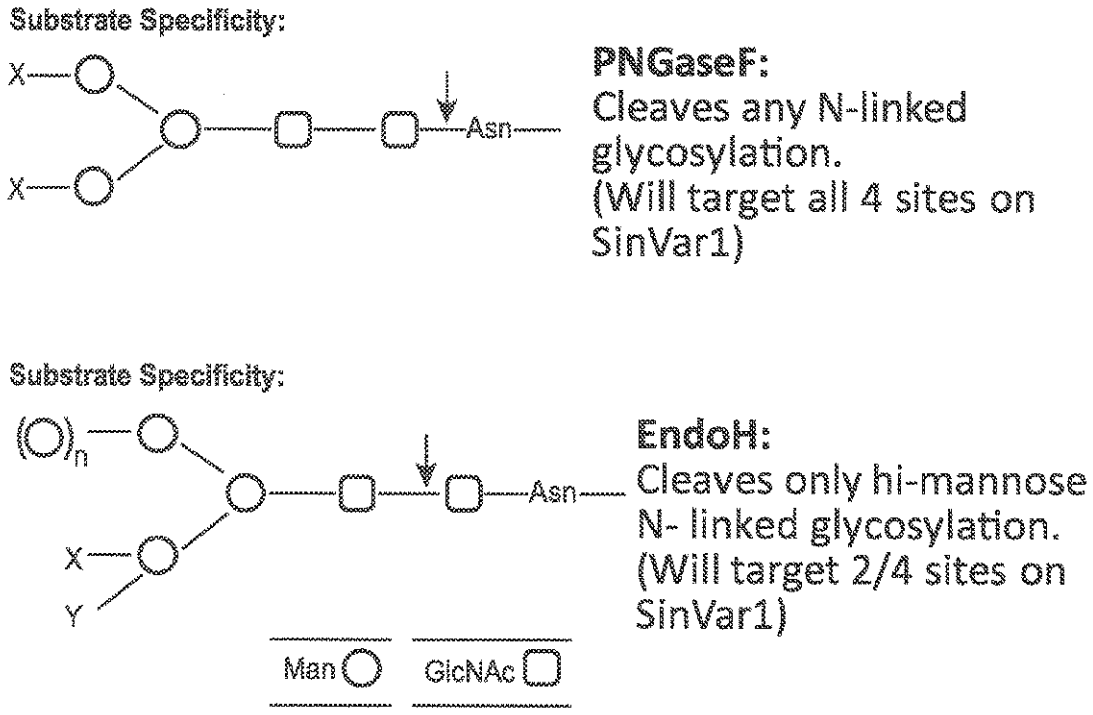

Substrate Specificity:
X
X
Asn
PNGaseF:
Cleaves any N-linked glycosylation.
(Will target all 4 sites on SinVar1)
Substrate Specificity:
(O)n
X
Y
Asn
EndoH:
Cleaves only hi-mannose N- linked glycosylation.
(Will target 2/4 sites on SinVar1)
Man
GlcNAc

FIG. 3A

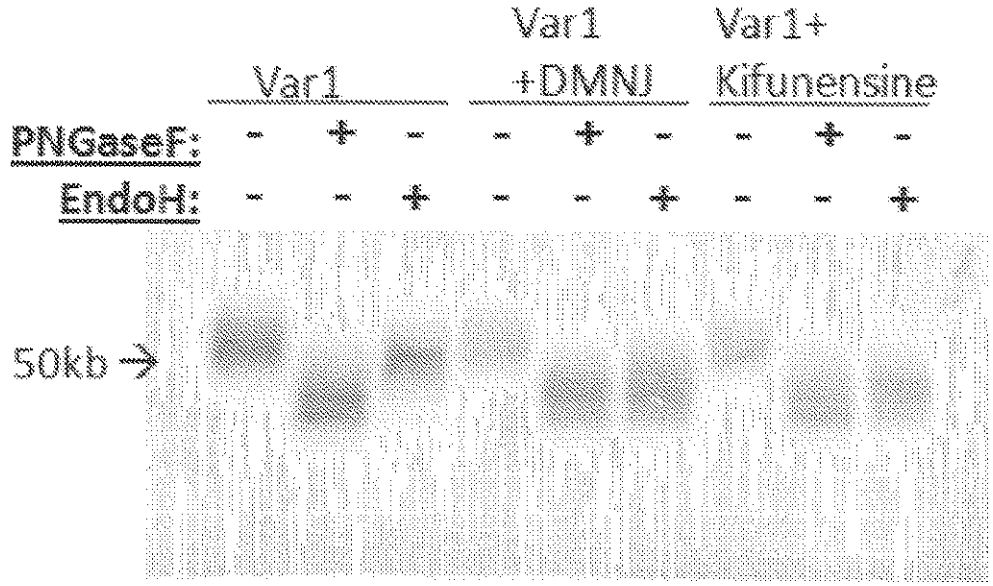

Var1
Var1
+DMNJ
Var1+
Kifunensine
PNGaseF: - + - - + - - + -
EndoH: - - + - - + - - +
50kb

FIG. 3B

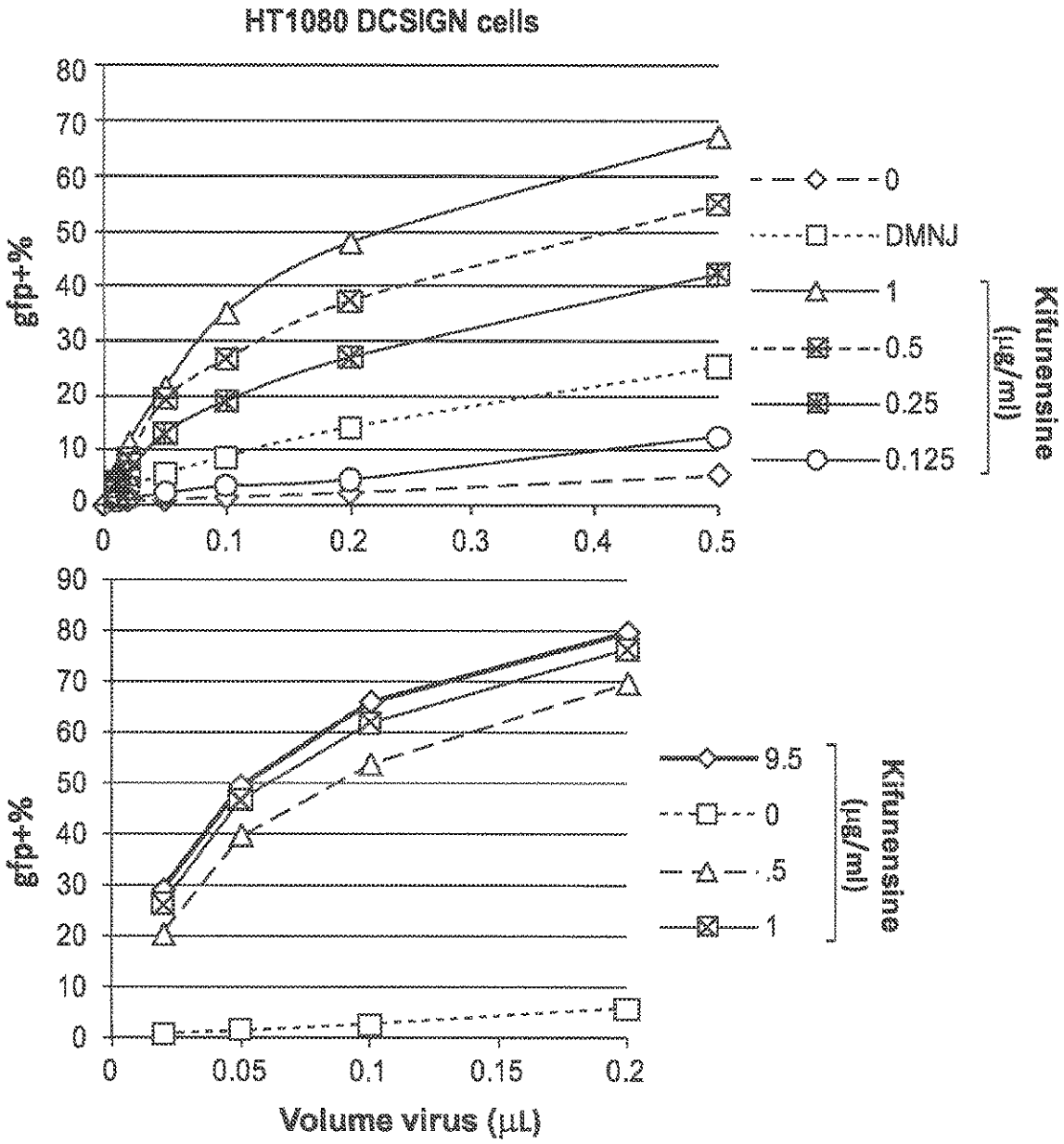

HT1080 DCSIGN cells
gfp+%
Volume virus (µL)
0
DMNJ
1
0.5
0.25
0.125
Kifunensine (µg/ml)
9.5
0
.5
1
Kifunensine (µg/ml)

FIG. 4A

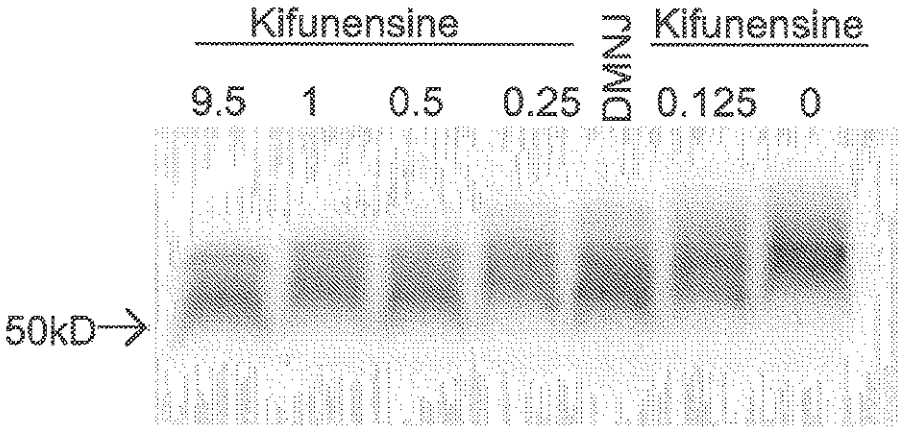



FIG. 4B

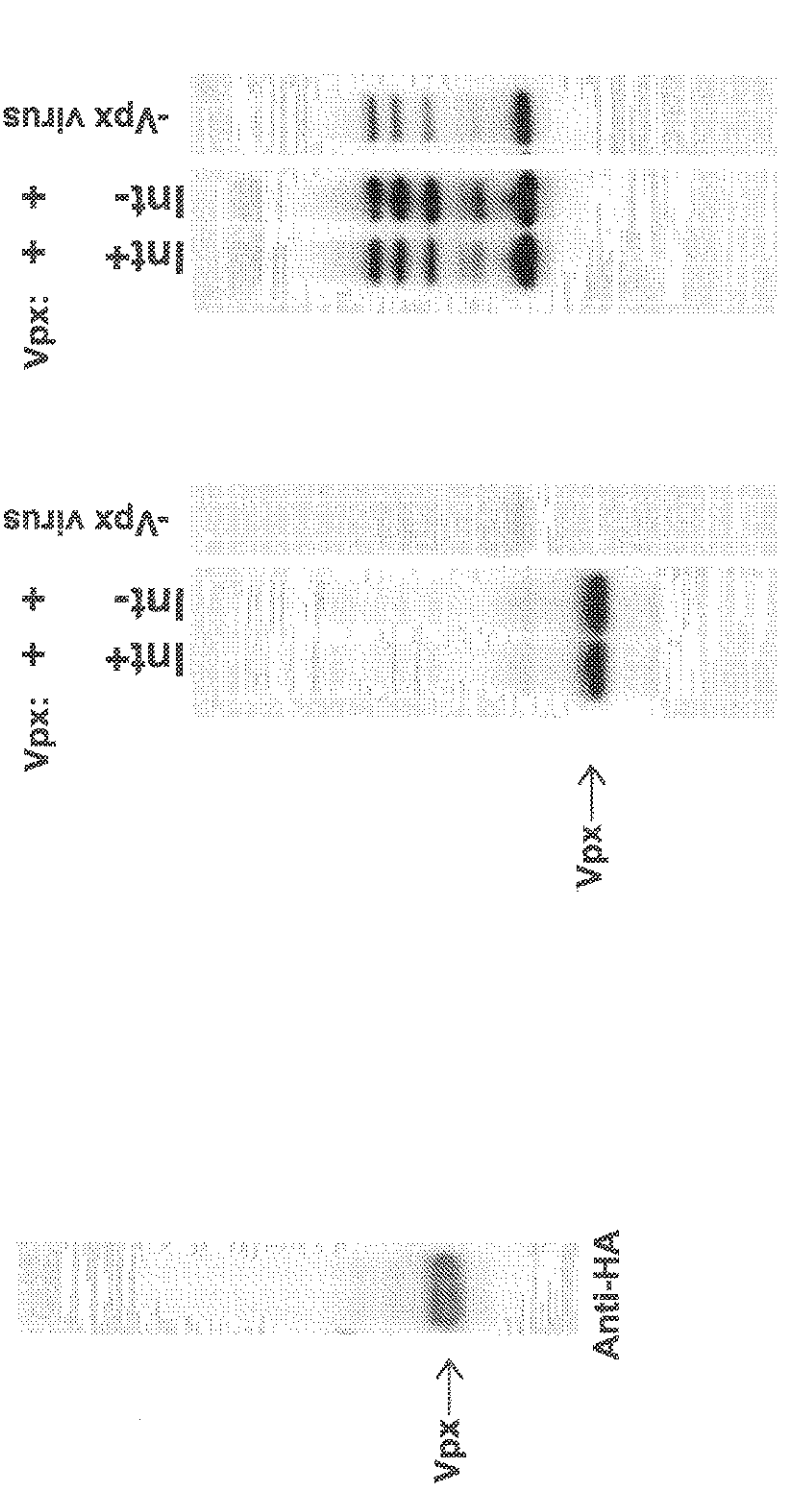

Anti-HA
Vpx
Anti-HA
100ng p24/well
Vpx: + + +
Int+
Int-
-Vpx virus
Anti-p24 (loading control)
50ng p24/well
Vpx: + + +
Int+
Int-
-Vpx virus

FIG. 5A

FIG. 5B

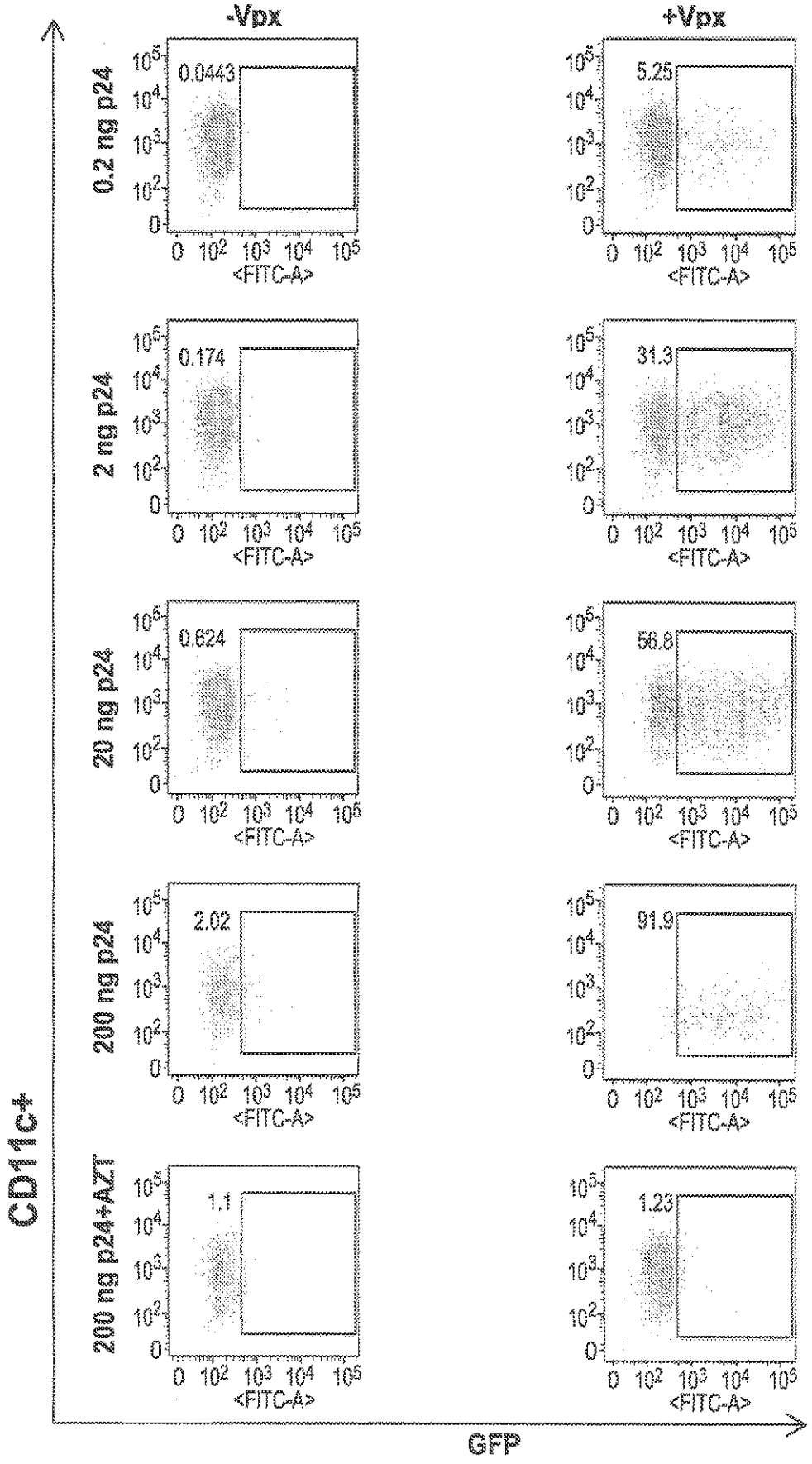

-Vpx
+Vpx
0.2 ng p24
2 ng p24
20 ng p24
200 ng p24
200 ng p24+AZT
0.0443
5.25
0.174
31.3
0.624
56.8
2.02
91.9
1.1
1.23
<FITC-A>
CD11c+
GFP

FIG. 6

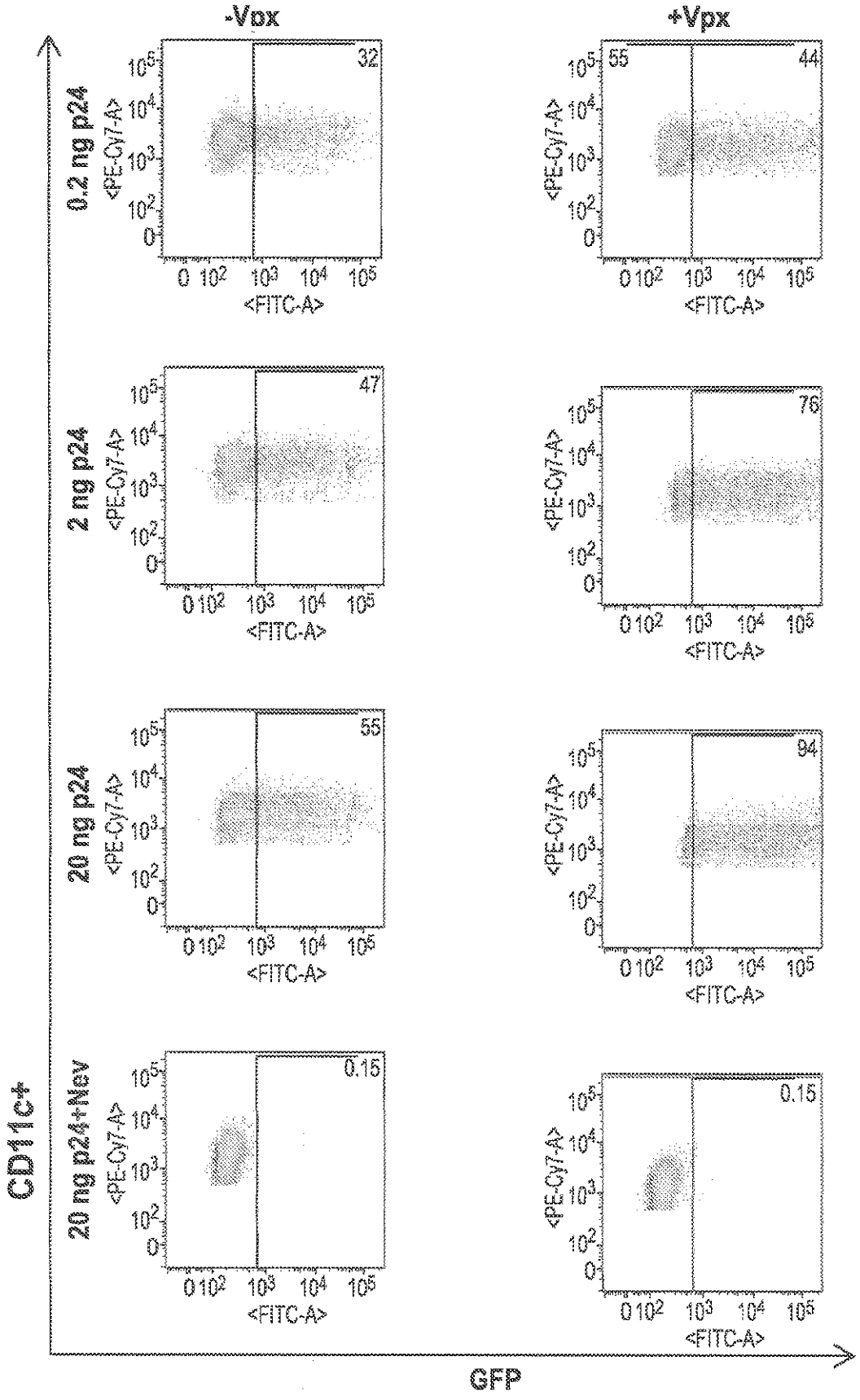

-Vpx
+Vpx
0.2 ng p24
2 ng p24
20 ng p24
20 ng p24+Nev
CD11c+
GFP
<PE-Cy7-A>
<FITC-A>
32
55
44
47
76
55
94
0.15
0.15

FIG. 7

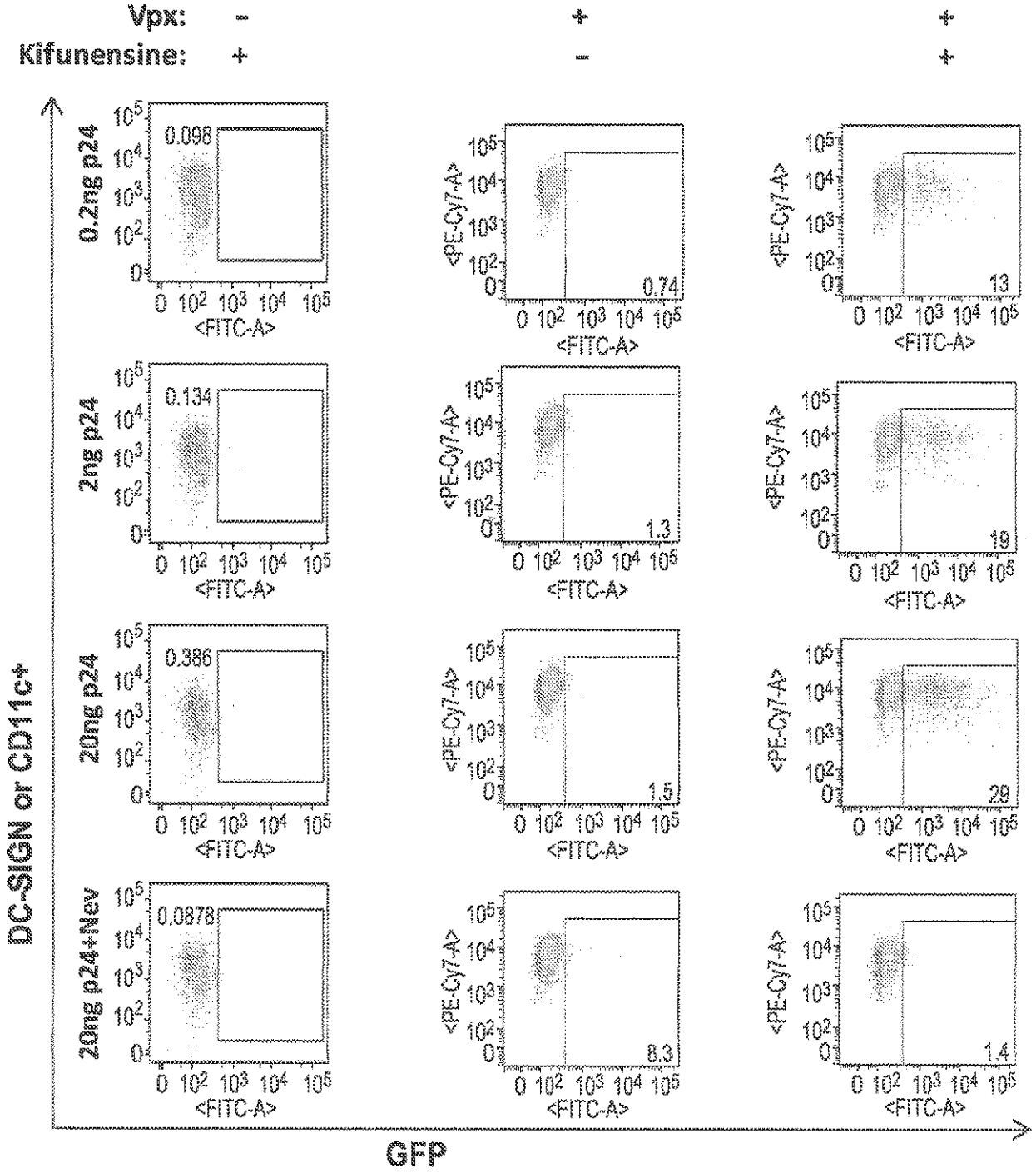

Vpx: - + +
Kifunensine: + - +
0.2ng p24
2ng p24
20ng p24
20ng p24+Nev
0.098
0.134
0.386
0.0878
0.74
1.3
1.5
8.3
13
19
29
1.4
<FITC-A>
<PE-Cy7-A>
DC-SIGN or CD11c+
GFP

FIG. 8

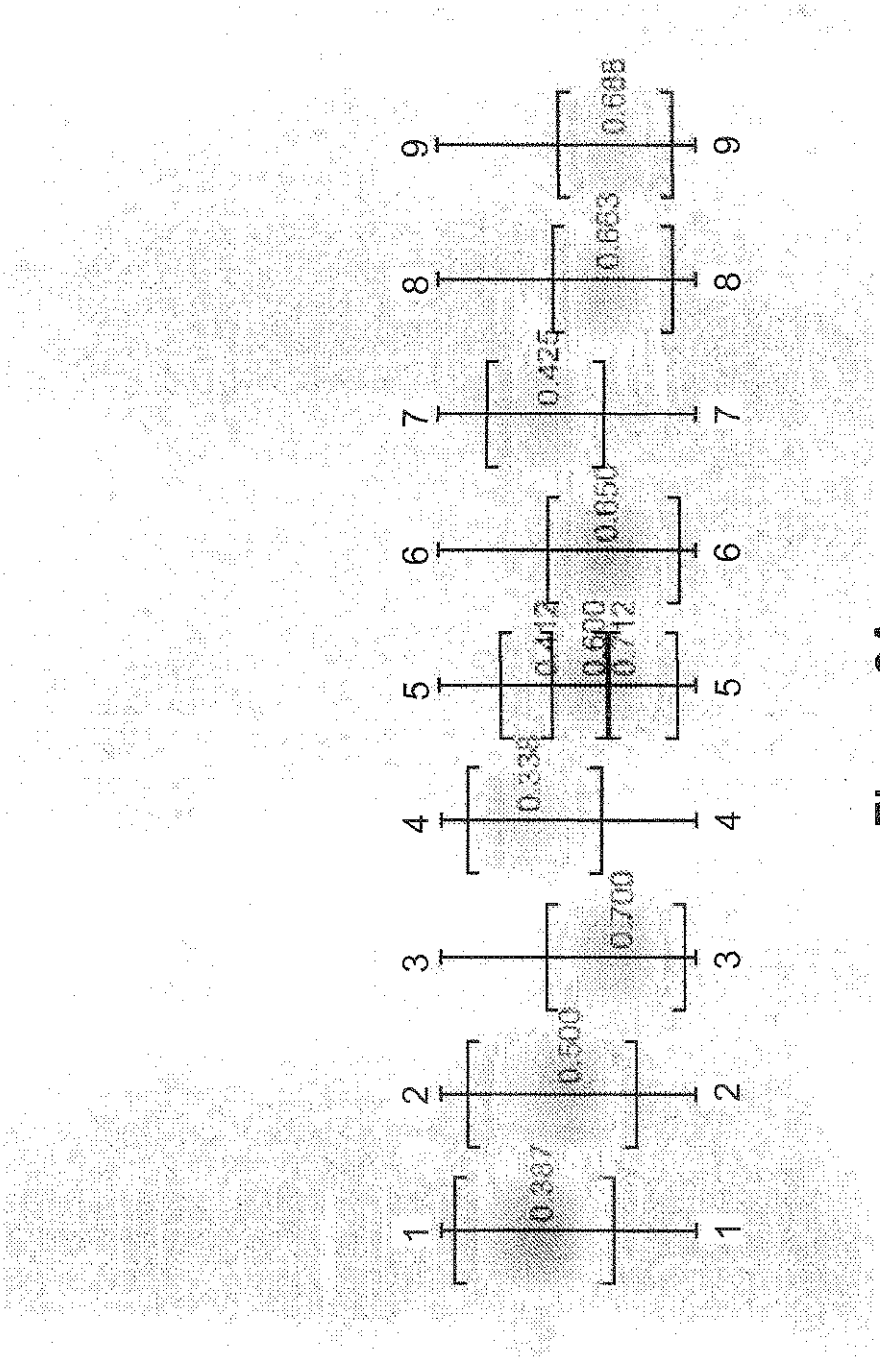



Figure 9A

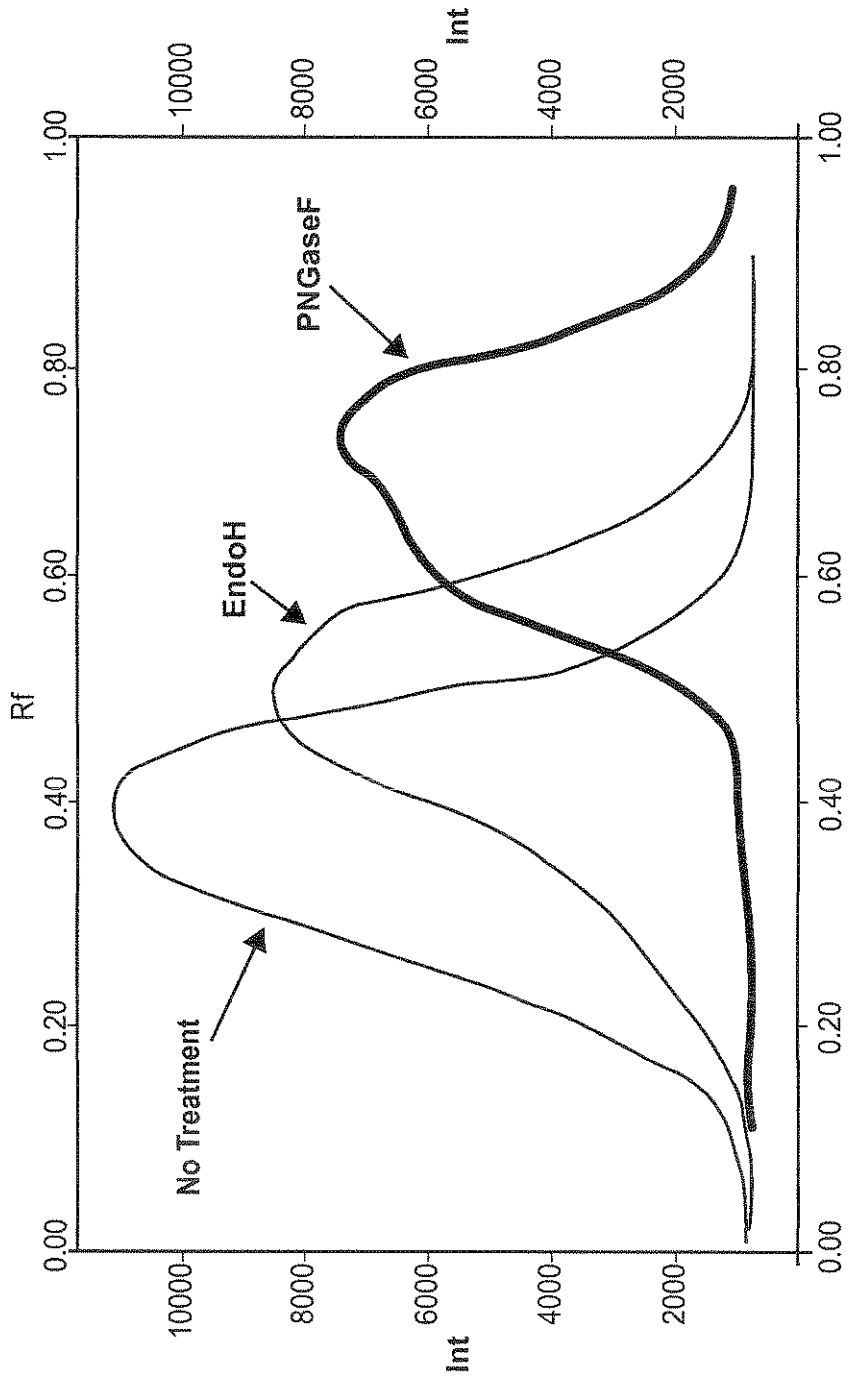

Int
10000
8000
6000
4000
2000
Rf
0.00
0.20
0.40
0.60
0.80
1.00
PNGaseF
EndoH
No Treatment

Figure 9B

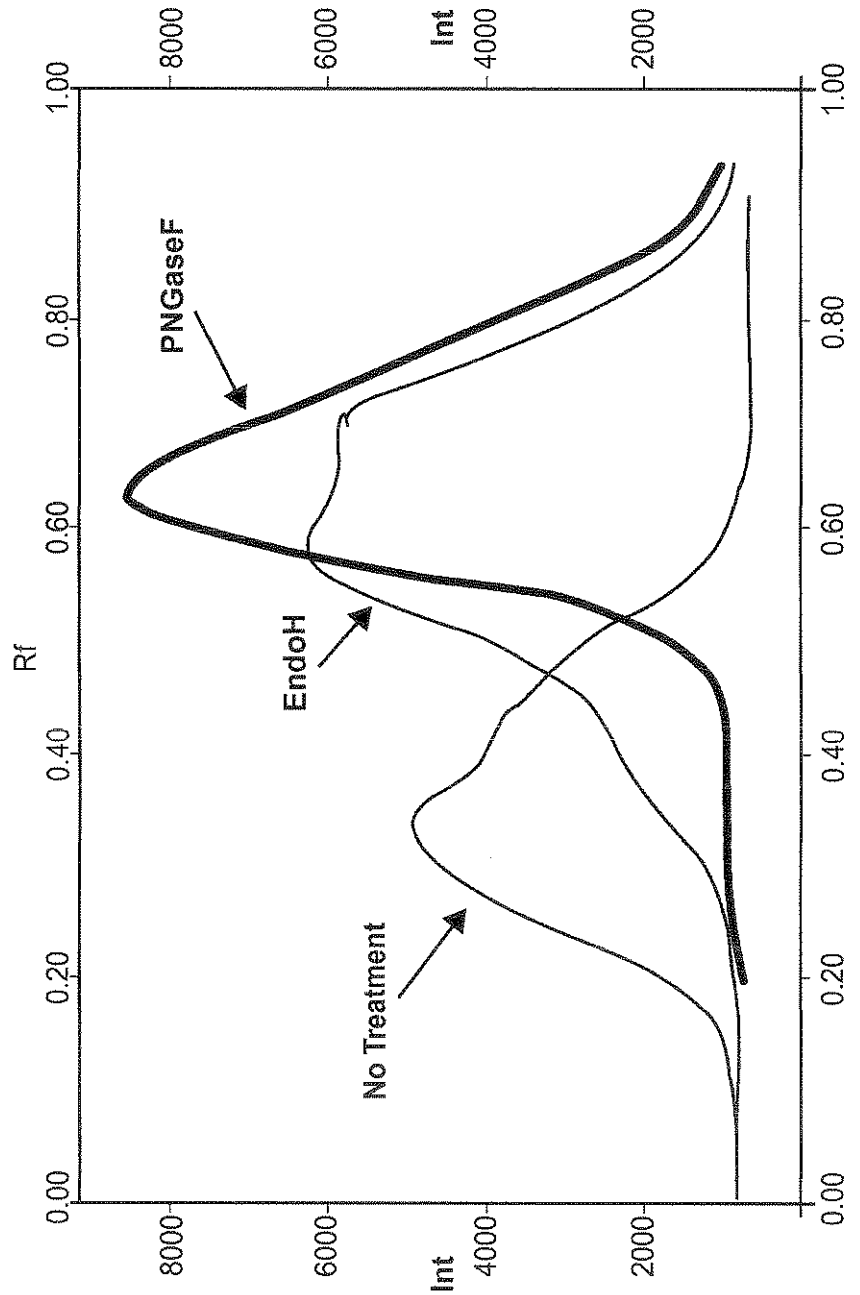

Rf
Int
PNGaseF
EndoH
No Treatment
0.00
0.20
0.40
0.60
0.80
1.00
2000
4000
6000
8000

Figure 9C

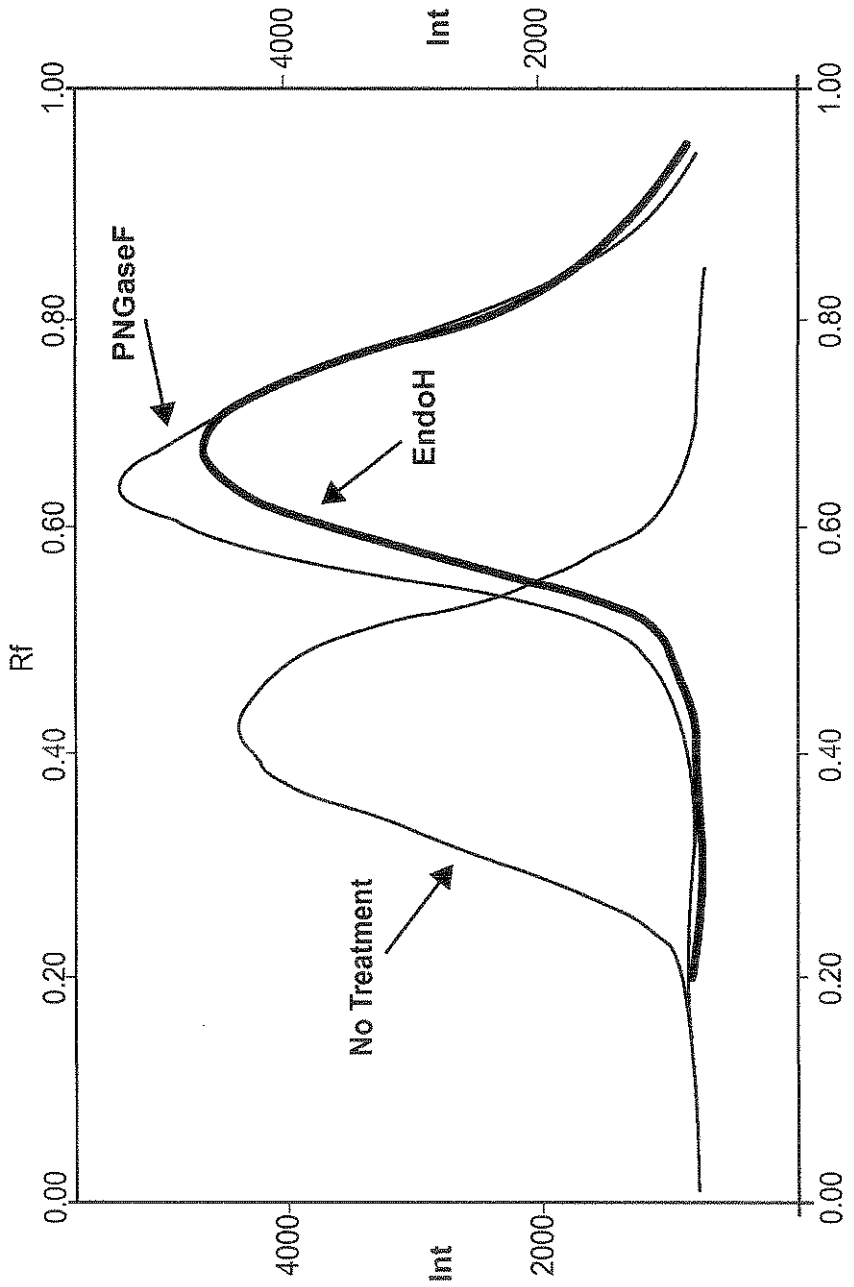
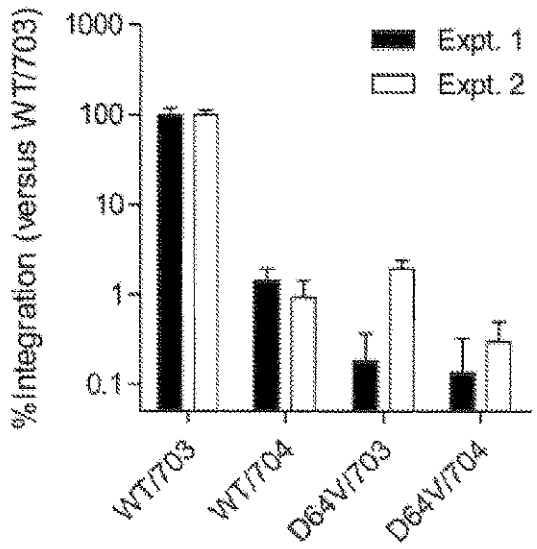
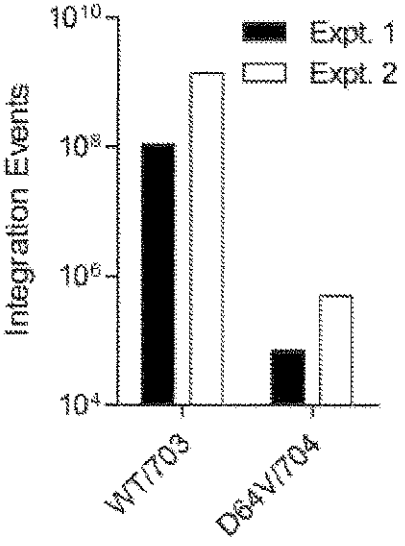

Int
4000
2000
1.00
0.80
0.60
0.40
0.20
0.00
Rf
PNGaseF
EndoH
No Treatment

Figure 9D



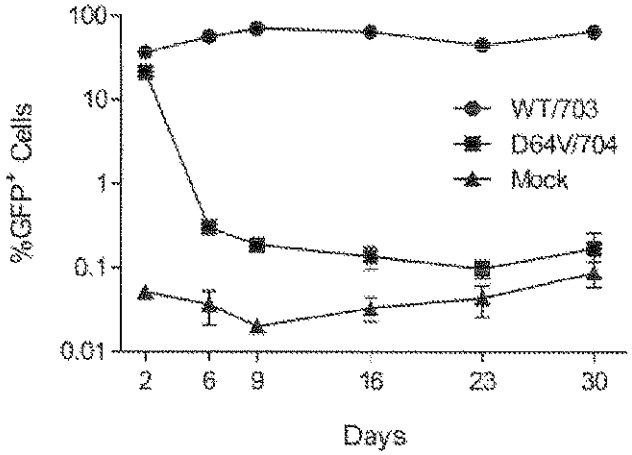

| | Fold Reduction (versus WT/703) | |
|---|---|---|
| | Expt. 1 | Expt. 2 |
| **WT/704** | 69.1 | 110.9 |
| **D64V/703** | 544.7 | 51.4 |
| **D64V/704** | 731.1 | 323.8 |

**Figure 10A**




| | Fold Reduction (versus WT/703) | |
|---|---|---|
| | Expt. 1 | Expt. 2 |
| **D64V/704** | 1,571 | 2,800 |

**Figure 10B**




| | Fold Reduction (versus WT/703) | | | | | |
|---|---|---|---|---|---|---|
| | Day 2 | Day 6 | Day 9 | Day 16 | Day 23 | Day 30 |
| **D64V/704** | 1.71 | 187.63 | 439.38 | 462.64 | 448.10 | 385.65 |

**FIGURE 10C**

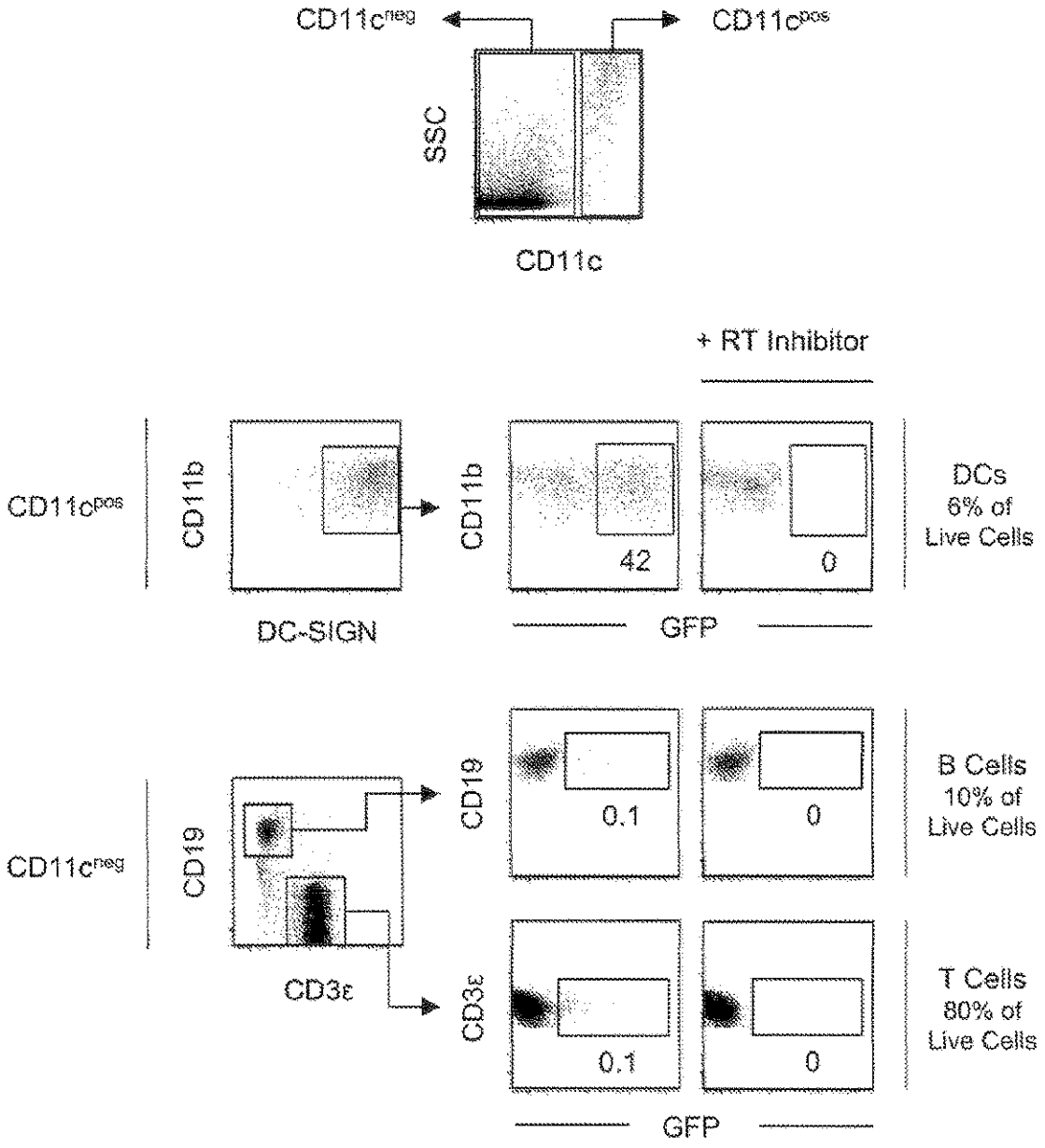

CD11c^neg
CD11c^pos
SSC
CD11c
+ RT Inhibitor
CD11c^pos
CD11b
DC-SIGN
CD11b
42
0
GFP
DCs
6% of
Live Cells
CD11c^neg
CD19
CD3ε
CD19
0.1
0
B Cells
10% of
Live Cells
CD3ε
0.1
0
GFP
T Cells
80% of
Live Cells

**Figure 11**

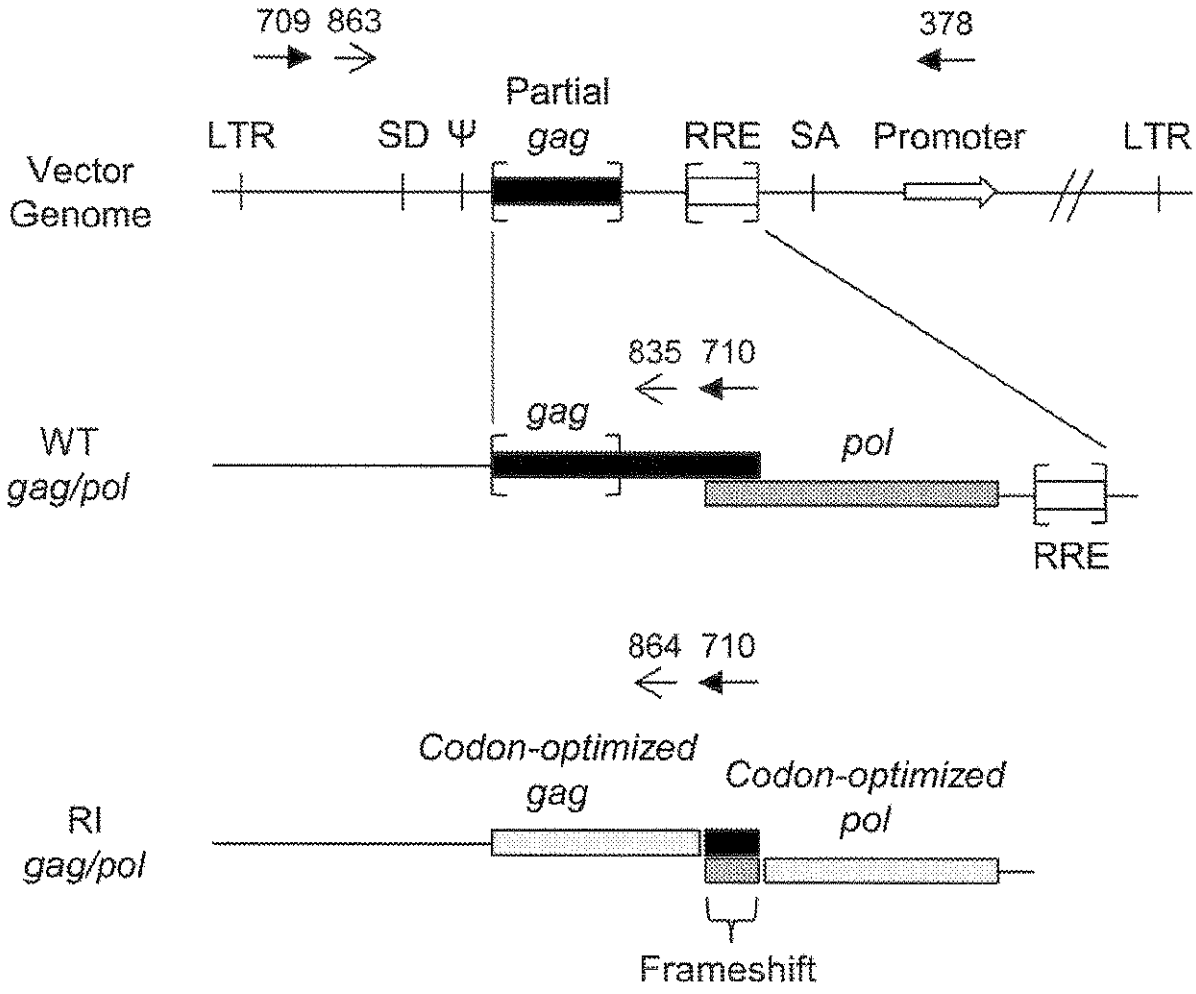

709 863
378
Partial
LTR
SD Ψ
gag
RRE
SA
Promoter
LTR
Vector
Genome
835 710
gag
WT
gag/pol
pol
RRE
864 710
Codon-optimized
gag
Codon-optimized
pol
RI
gag/pol
Frameshift

**Figure 12**

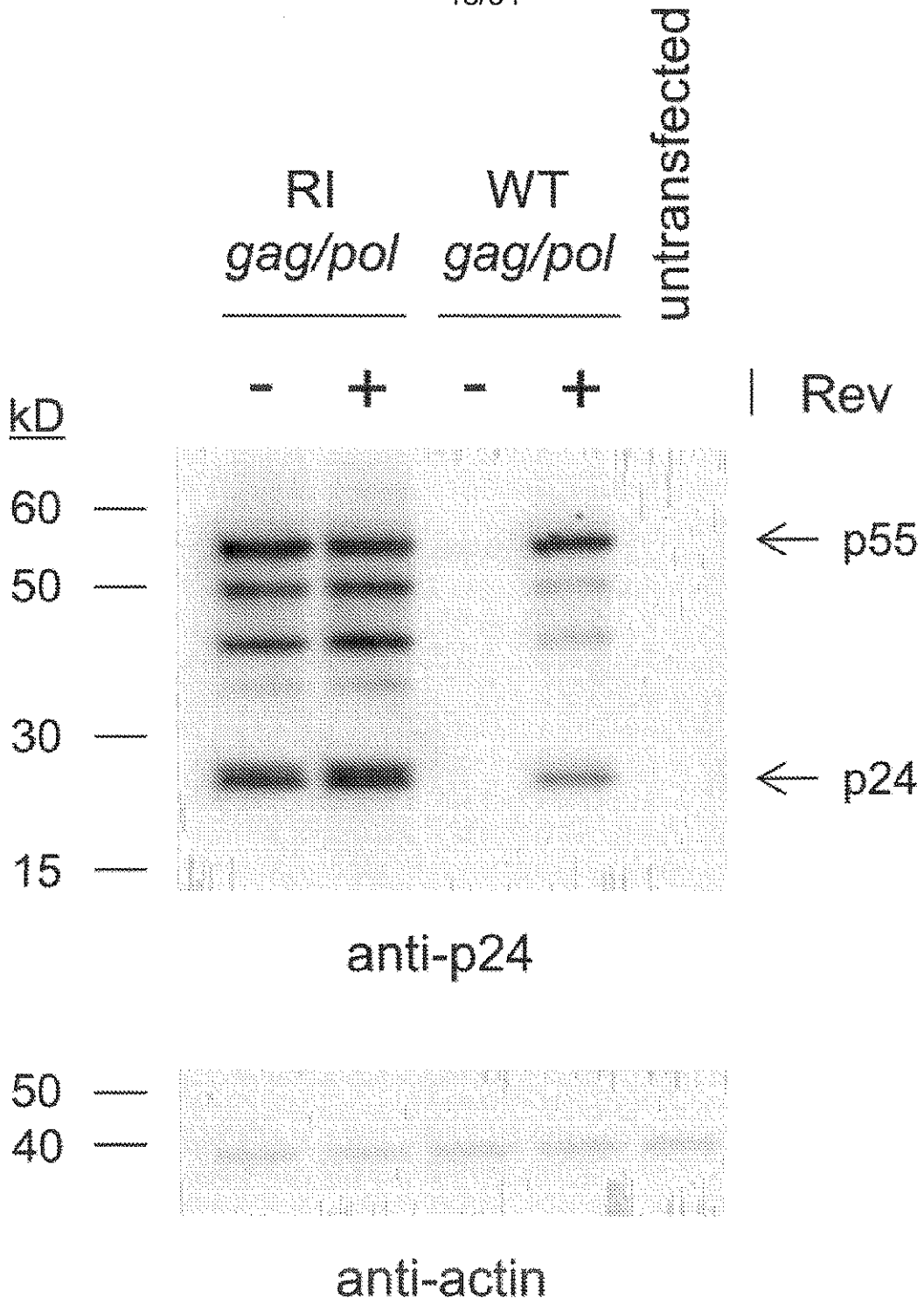

RI
gag/pol
WT
gag/pol
untransfected
- + - +
Rev
kD
60
50
30
15
p55
p24
anti-p24
50
40
anti-actin

**Figure 13**

| | 6 µg *gag/pol* DNA | | 3 µg gag/pol DNA | |
|---|---|---|---|---|
| | WT *gag/pol* | RI *gag/pol* | WT *gag/pol* | RI *gag/pol* |
| p24 (ng/mL) | 206+/- 21 | 235 +/- 6 | 84 +/- 3 | 100 +/- 6 |

**Figure 14A**

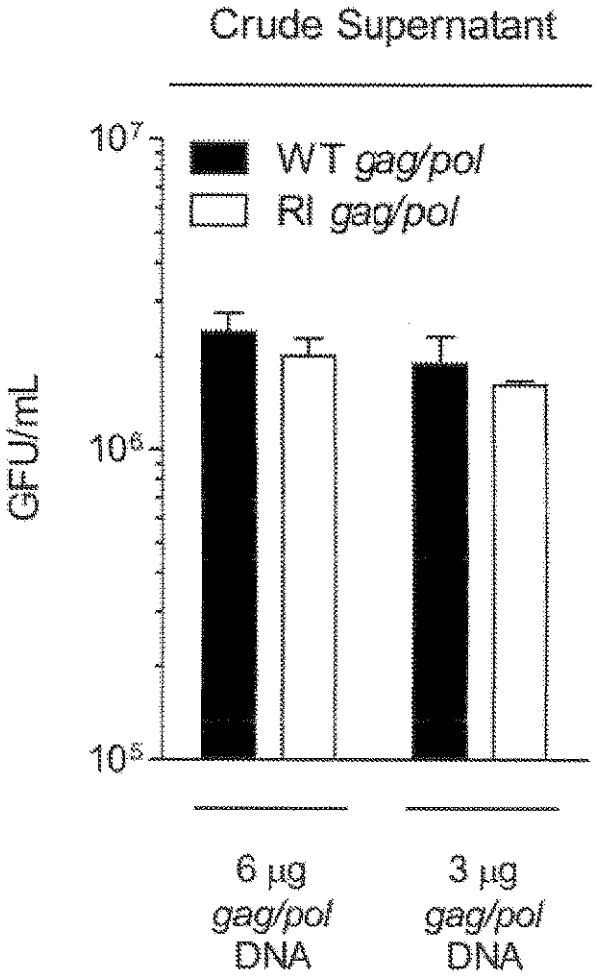



**Figure 14B**

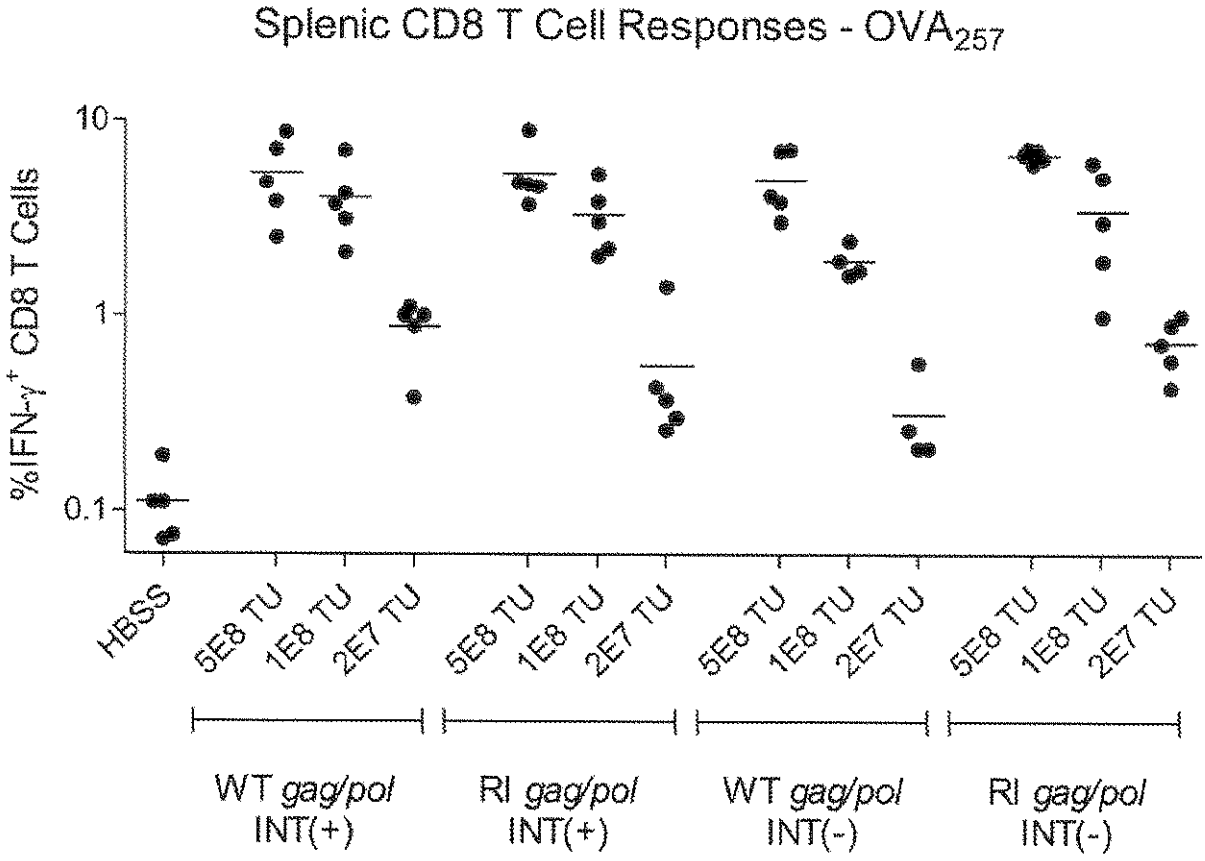

Splenic CD8 T Cell Responses - OVA257
%IFN-γ+ CD8 T Cells
10
1
0.1
HBSS
5E8 TU
1E8 TU
2E7 TU
5E8 TU
1E8 TU
2E7 TU
5E8 TU
1E8 TU
2E7 TU
5E8 TU
1E8 TU
2E7 TU
WT gag/pol INT(+)
RI gag/pol INT(+)
WT gag/pol INT(-)
RI gag/pol INT(-)

**Figure 15**

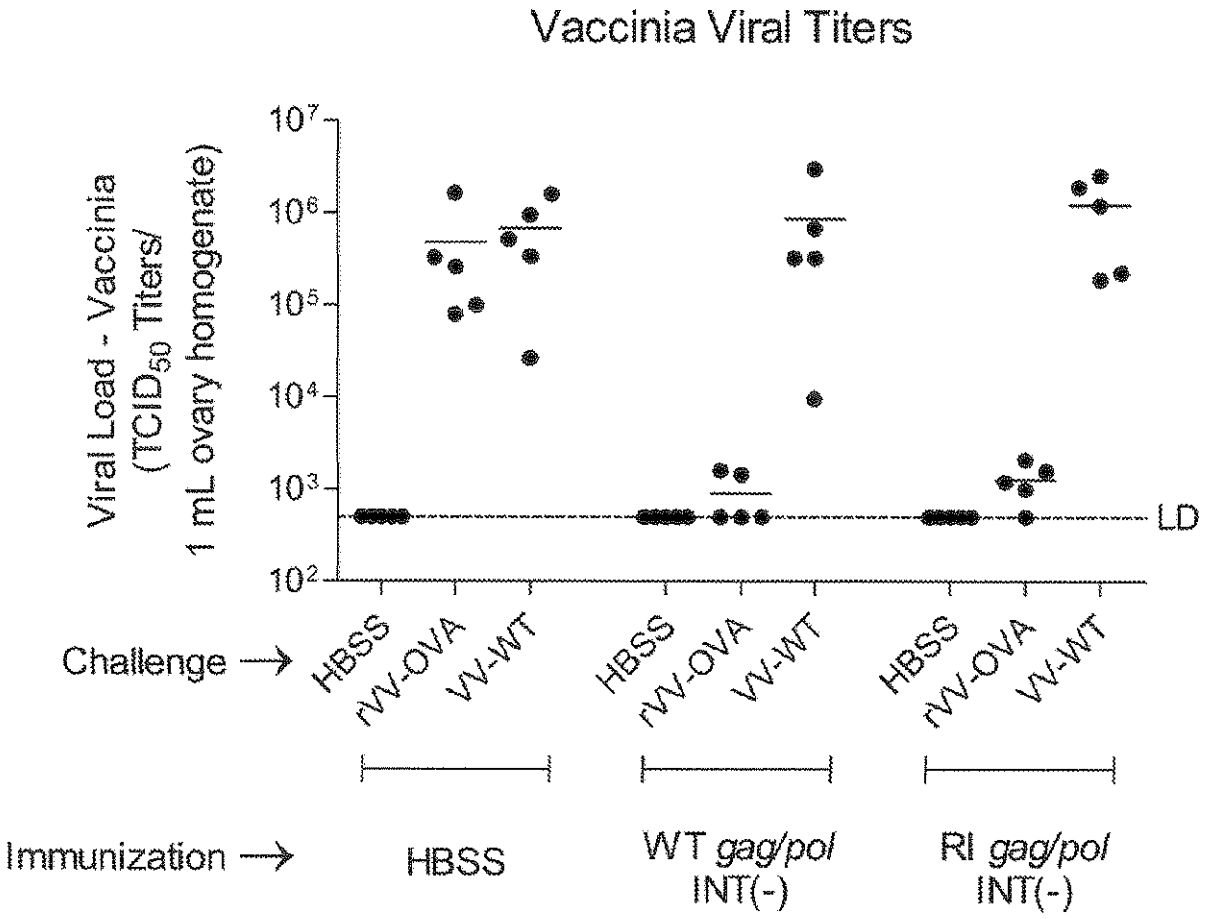

Vaccinia Viral Titers
Viral Load - Vaccinia
(TCID50 Titers/
1 mL ovary homogenate)
10^7
10^6
10^5
10^4
10^3
10^2
LD
Challenge →
HBSS
rVV-OVA
VV-WT
HBSS
rVV-OVA
VV-WT
HBSS
rVV-OVA
VV-WT
Immunization →
HBSS
WT gag/pol
INT(-)
RI gag/pol
INT(-)

**Figure 16**

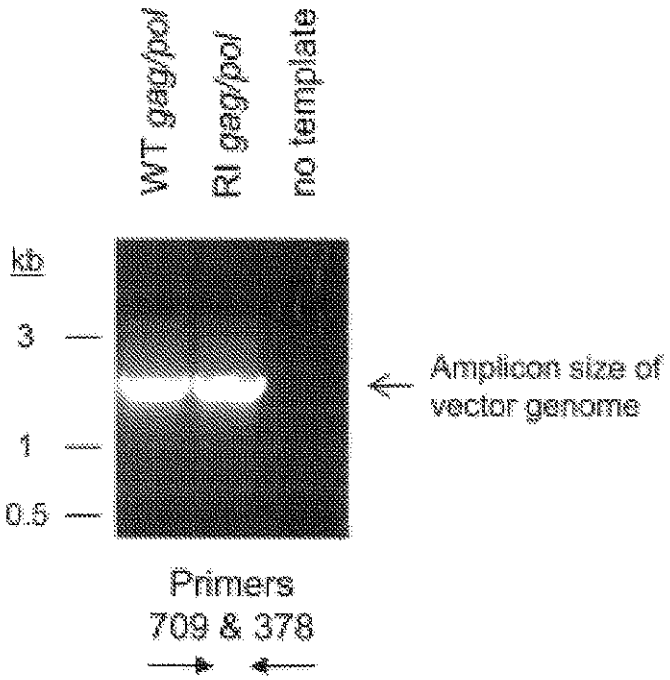



Figure 17A

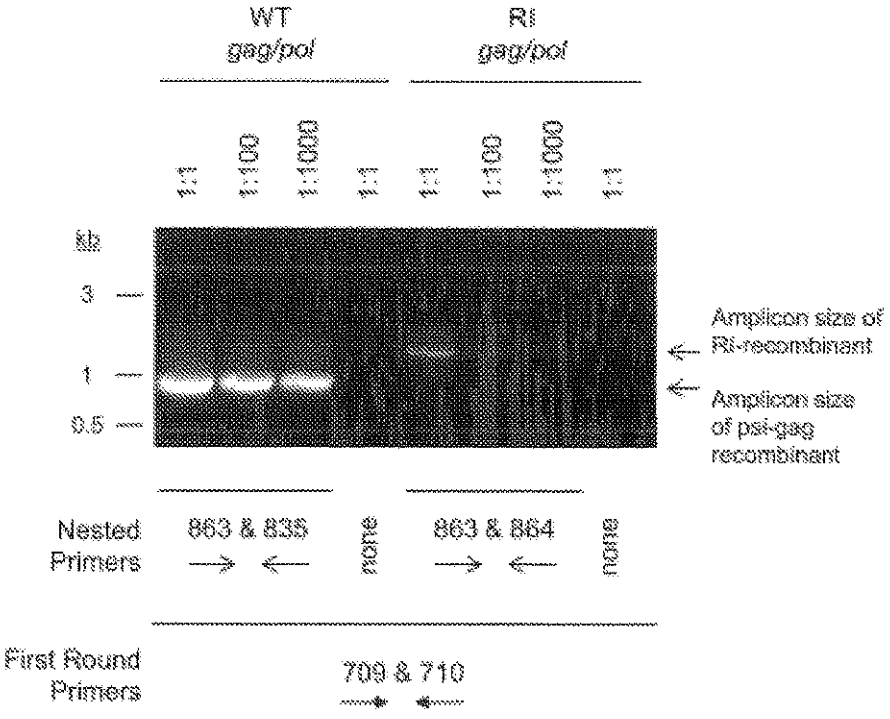



Figure 17B

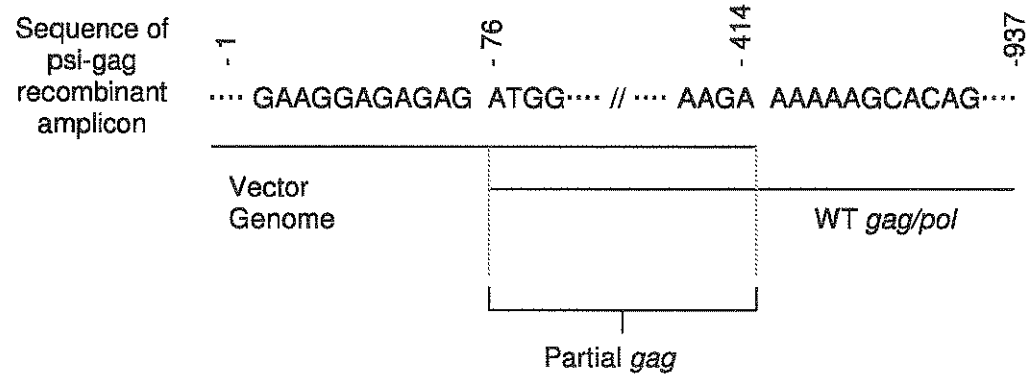



**Figure 17C**

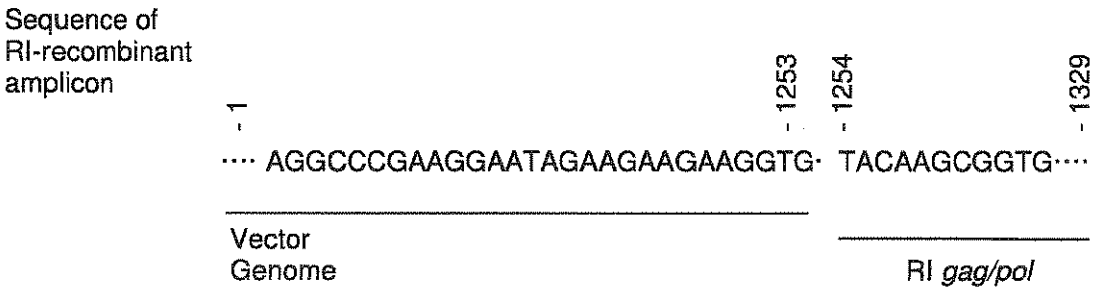
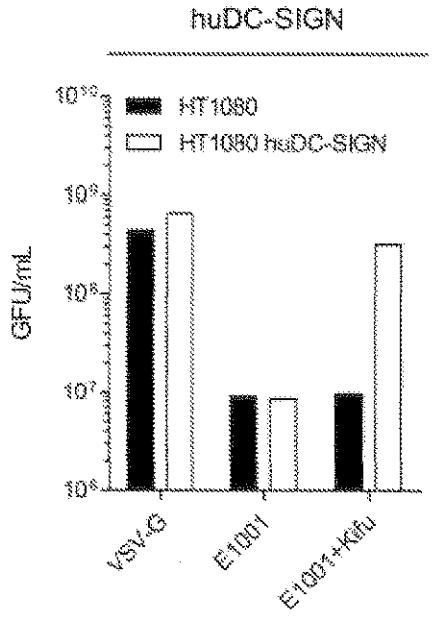
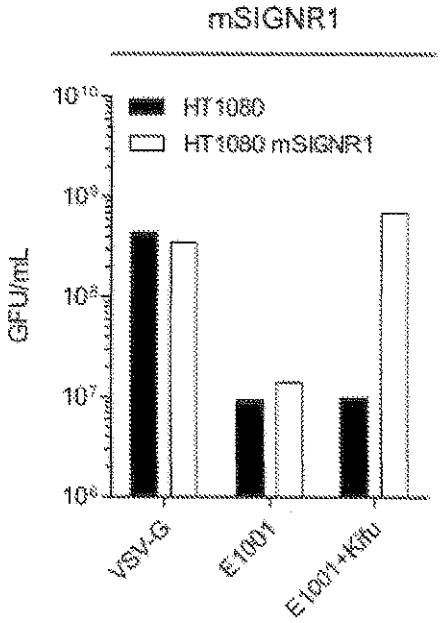



**Figure 17D**



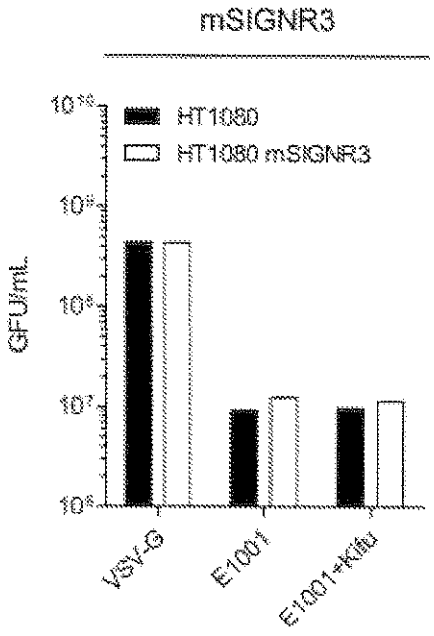

| | Titer Ratio (HT1080 huDC-SIGN / HT1080) | | |
|---|---|---|---|
| **Vector** | VSV-G | E1001 | E1001 +Kifu |
| **Ratio** | 1.4 | 0.9 | 33 |

**Figure 18A**



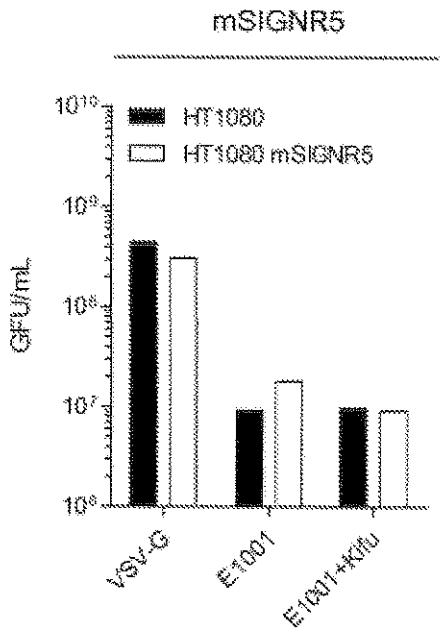

| | Titer Ratio (HT1080 huDC-SIGN / HT1080) | | |
|---|---|---|---|
| **Vector** | VSV-G | E1001 | E1001 +Kifu |
| **Ratio** | 0.8 | 1.5 | 71 |

**Figure 18B**




| | Titer Ratio (HT1080 mSIGNR3 / HT1080) | | |
|---|---|---|---|
| **Vector** | VSV-G | E1001 | E1001 +Kifu |
| **Ratio** | 1 | 1.3 | 1.2 |

**Figure 18C**




| | Titer Ratio (HT1080 mSIGNR5 / HT1080) | | |
|---|---|---|---|
| **Vector** | VSV-G | E1001 | E1001 +Kifu |
| **Ratio** | 0.7 | 1.9 | 0.9 |

**Figure 18D**

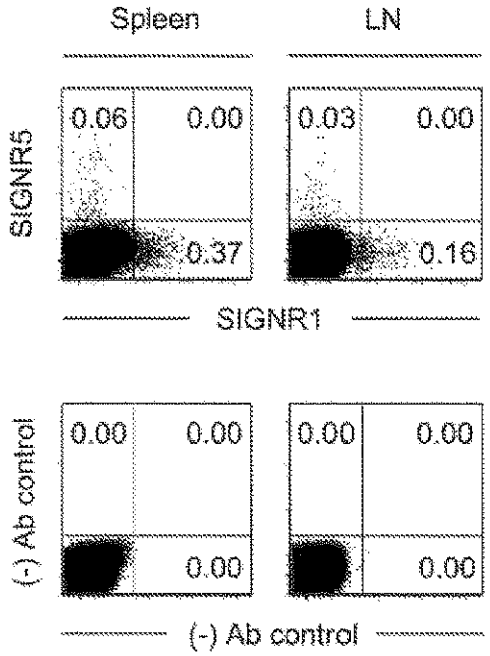



**Figure 19A**

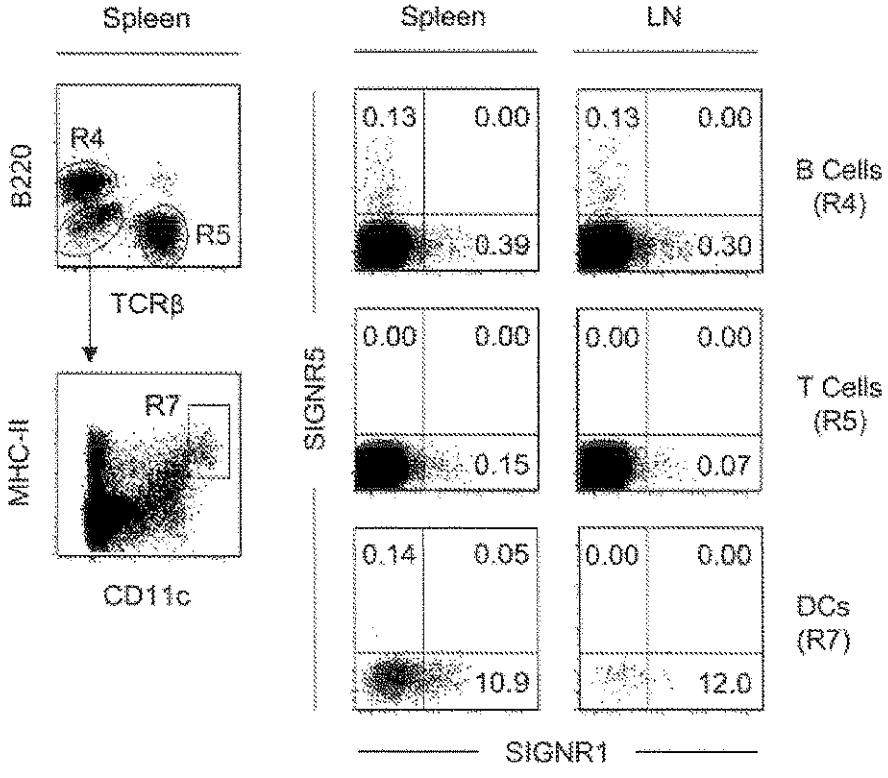



**Figure 19B**

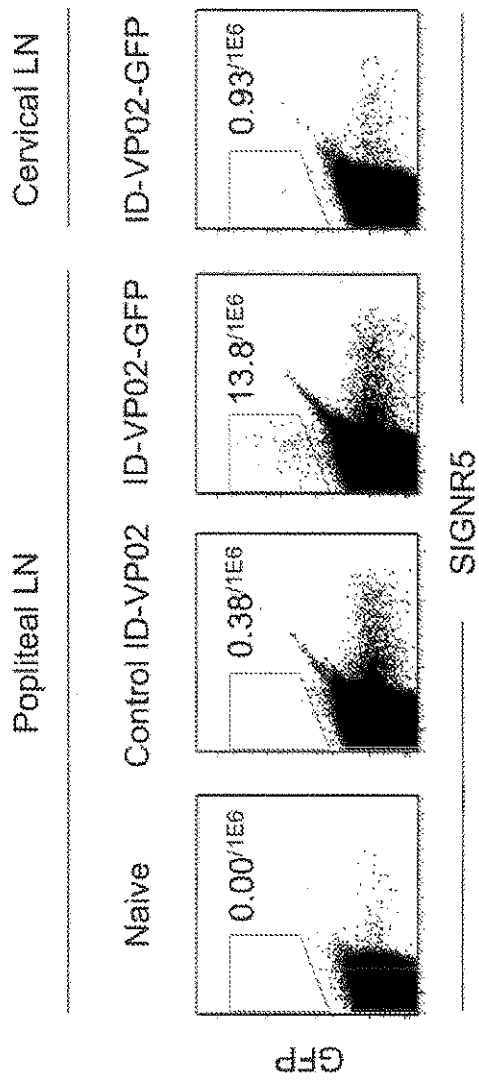



Figure 20A

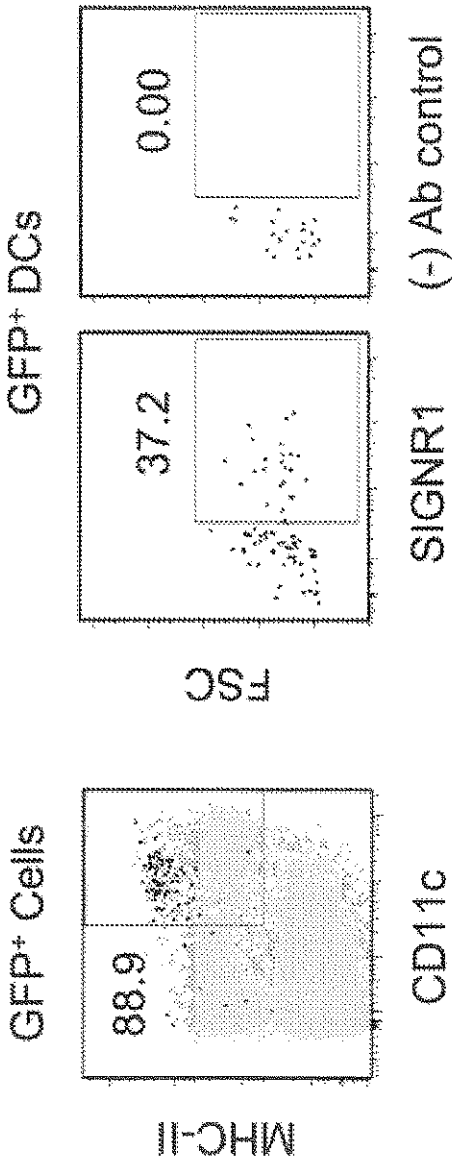



Figure 20B

Figure 20C

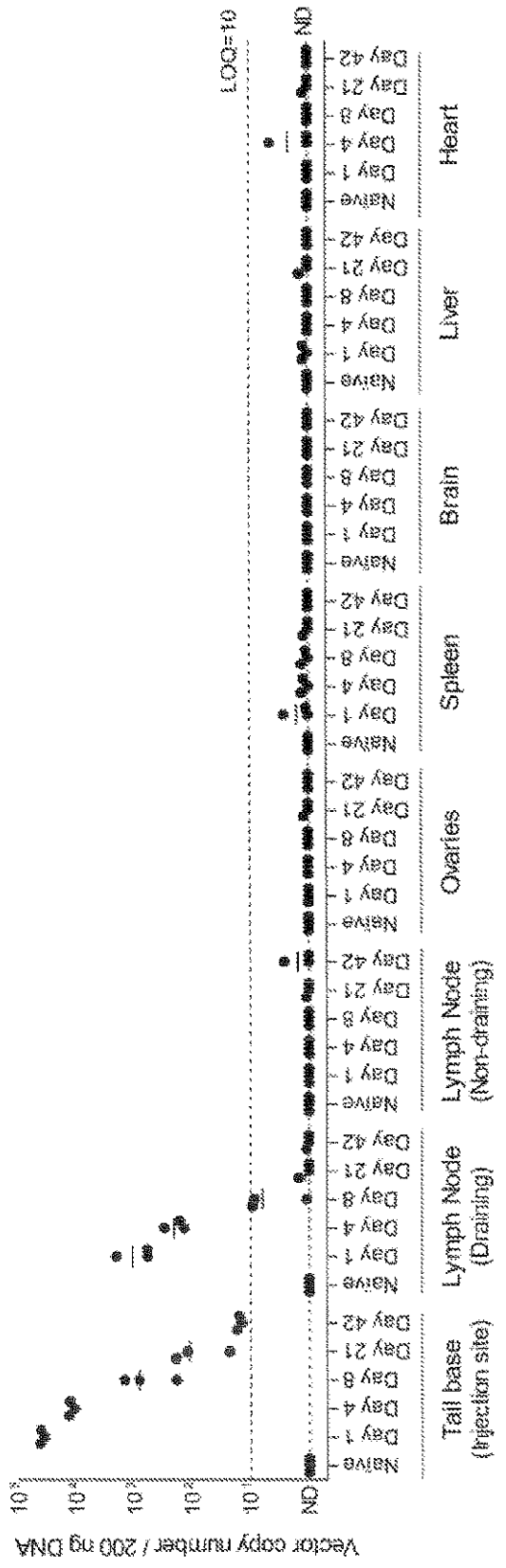

Vector copy number / 200 ng DNA
LOQ=10
LOD=1
Tail base (Injection site)
Lymph Node (Draining)
Lymph Node (Non-draining)
Ovaries
Spleen
Brain
Liver
Heart
Naïve
Day 1
Day 4
Day 8
Day 21
Day 42

Figure 21

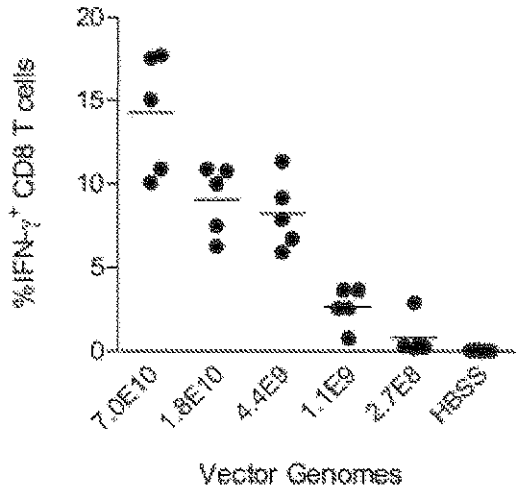



**Figure 22A**

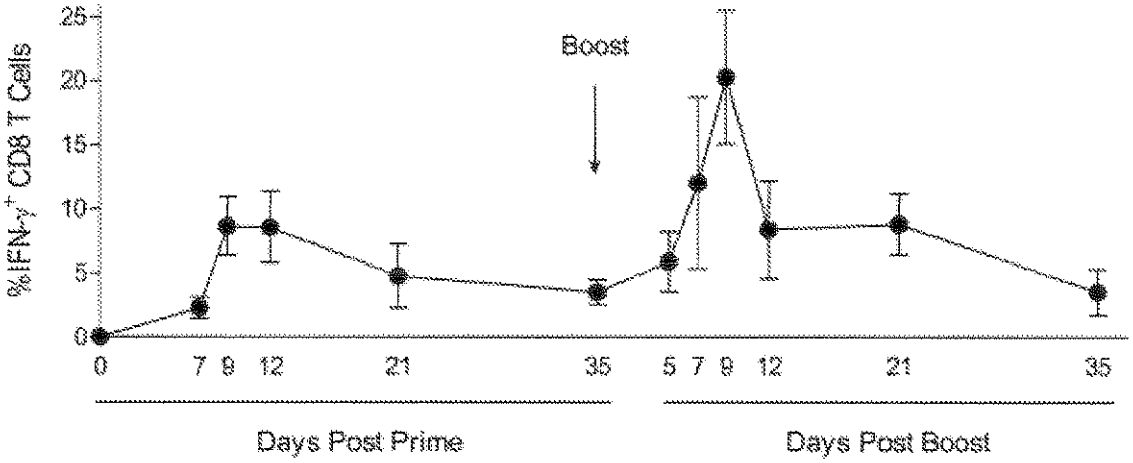



**Figure 22B**

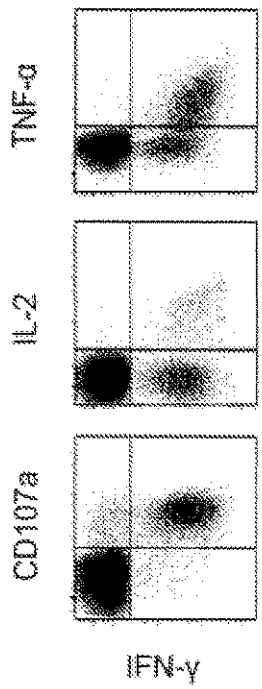



Figure 22C

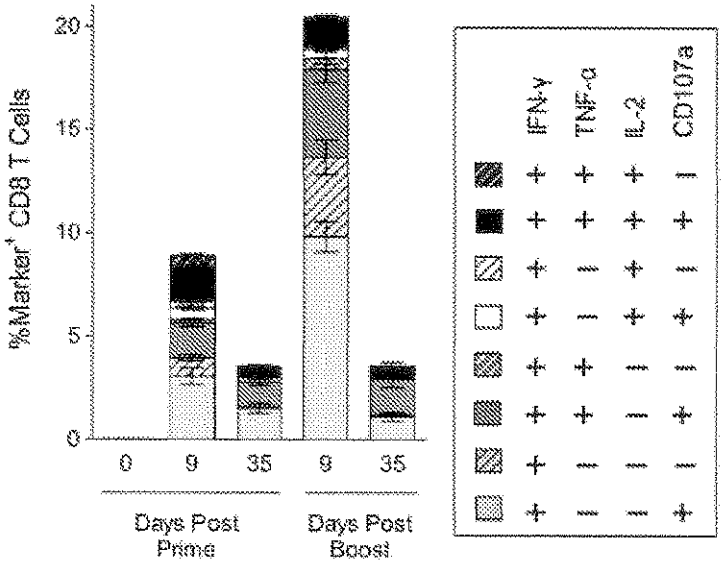



Figure 22D

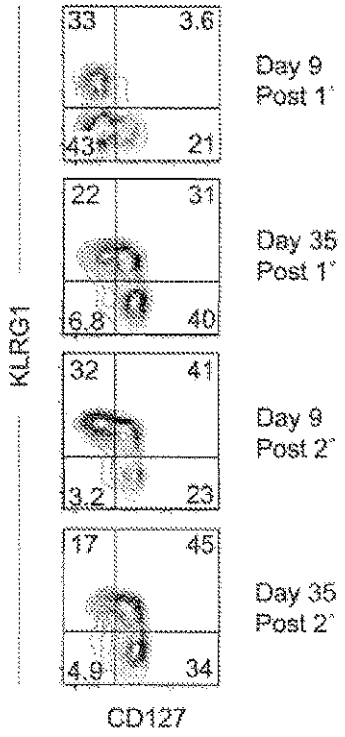



Figure 22E

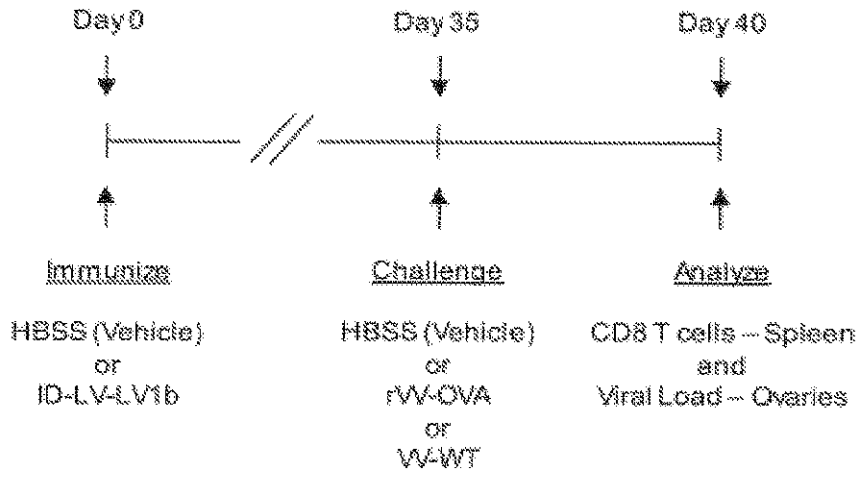



**Figure 23A**

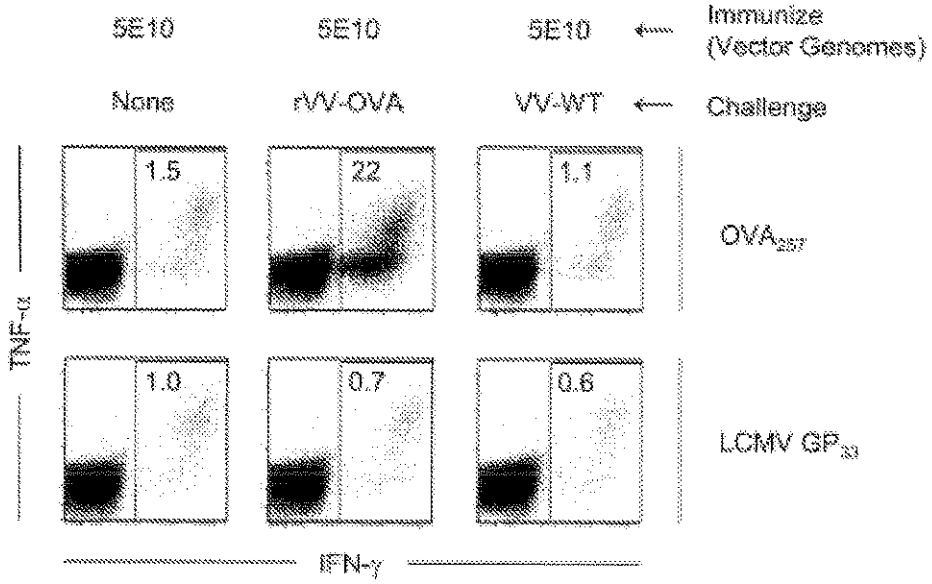



**Figure 23B**

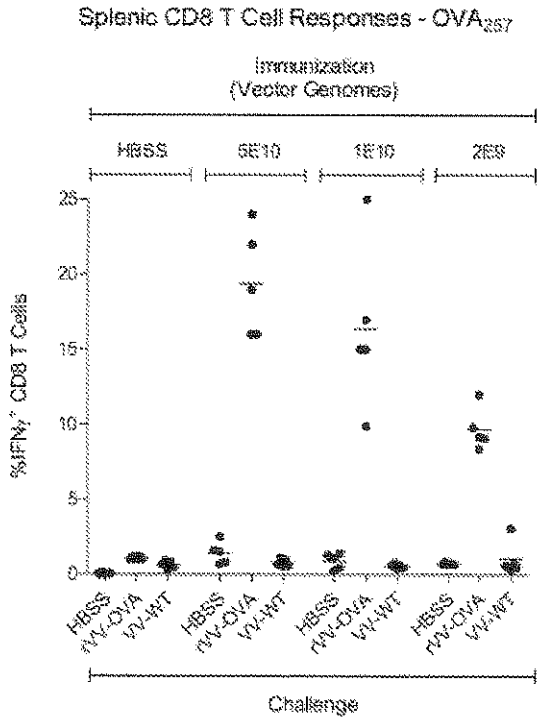



Figure 23C

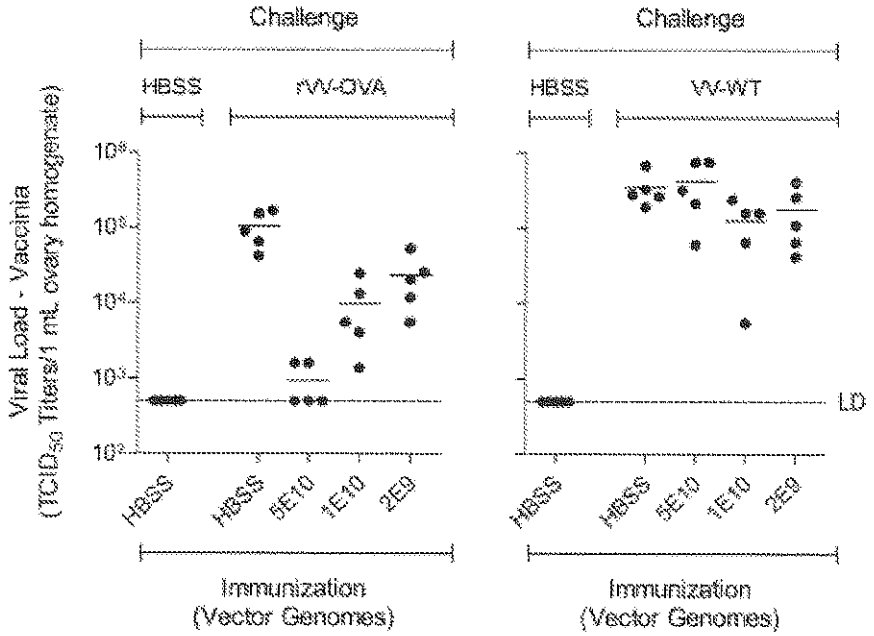



Figure 23D

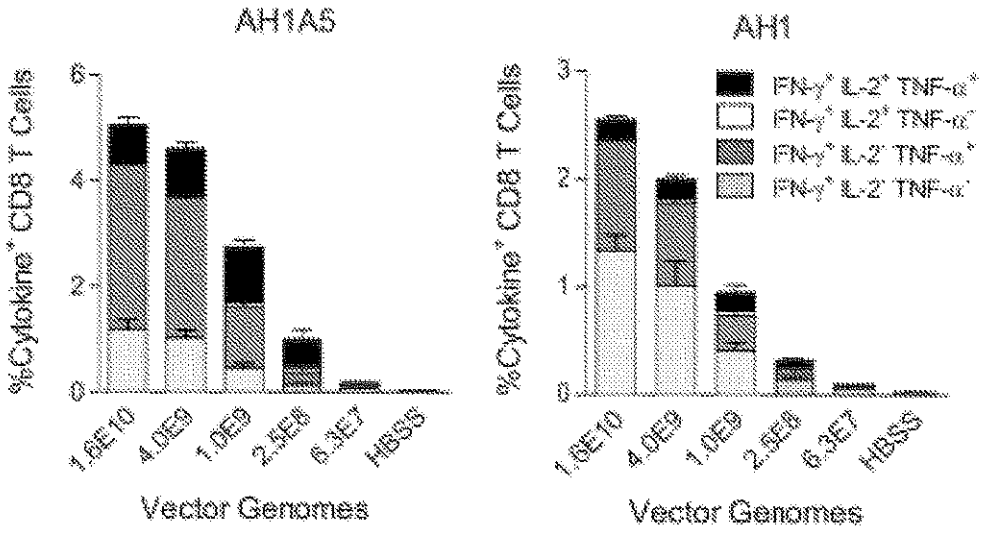



**Figure 24A**

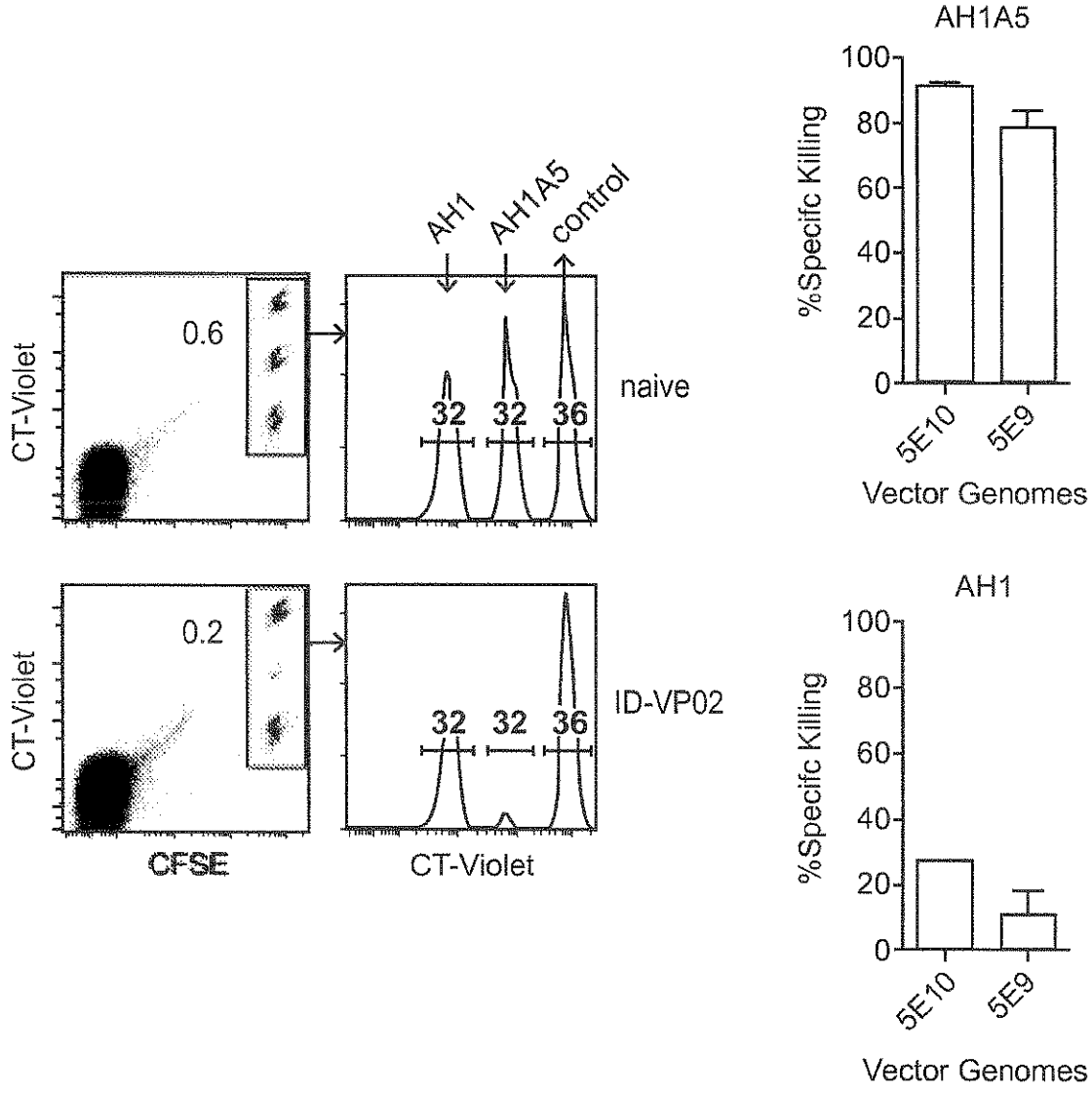



**Figure 24B**

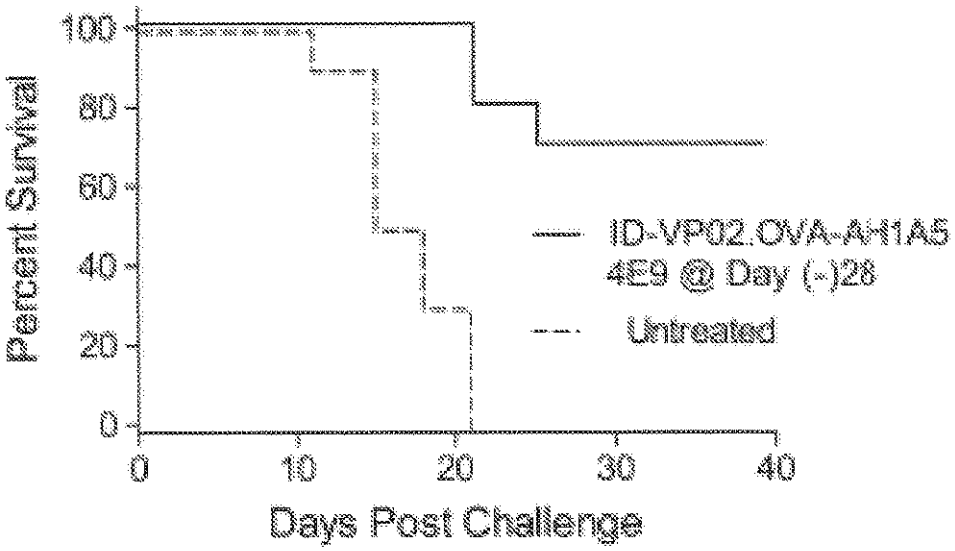



**Figure 24C**

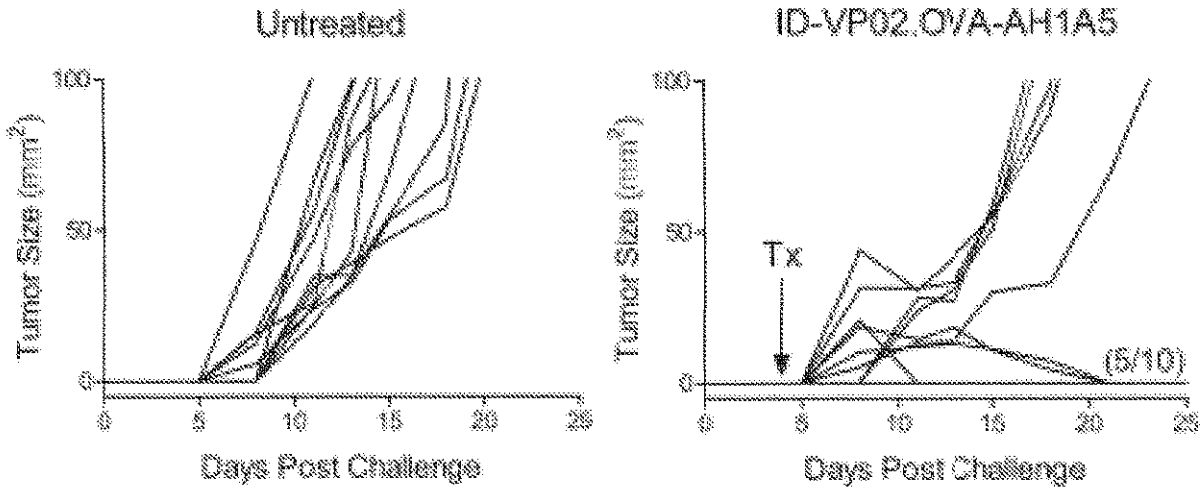



**Figure 24D**