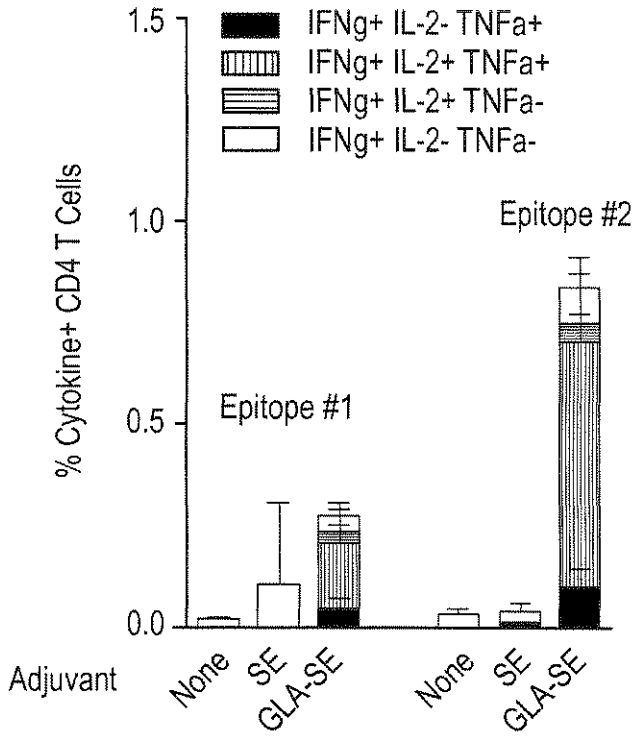

1.5
1.0
0.5
0.0
% Cytokine+ CD4 T Cells
IFNg+ IL-2- TNFa+
IFNg+ IL-2+ TNFa+
IFNg+ IL-2+ TNFa-
IFNg+ IL-2- TNFa-
Epitope #1
Epitope #2
Adjuvant
None
SE
GLA-SE
None
SE
GLA-SE

FIG. 1

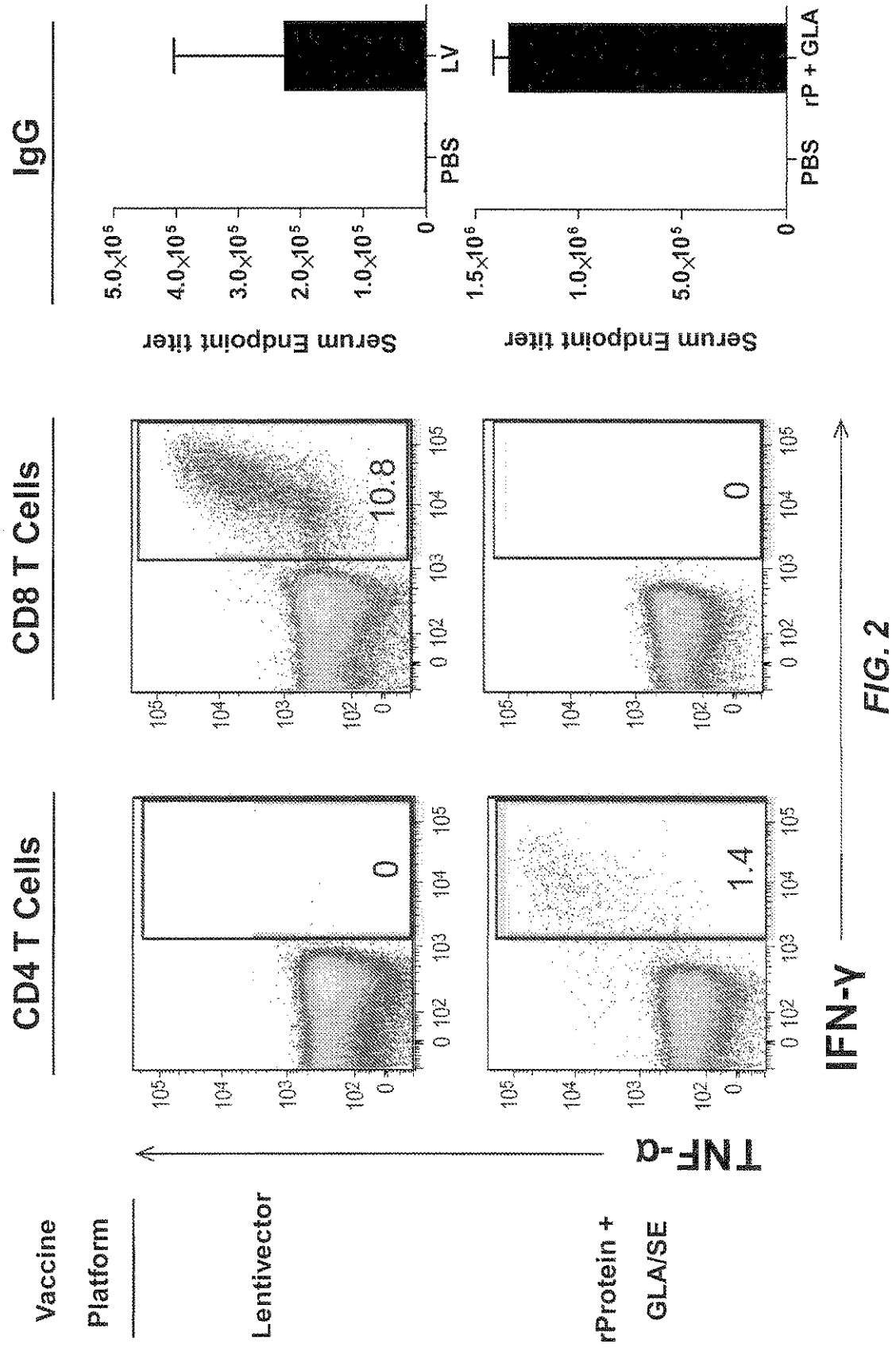

Vaccine Platform
Lentivector
rProtein + GLA/SE
CD4 T Cells
CD8 T Cells
IgG
TNF-α
IFN-γ
0
1.4
10.8
0
Serum Endpoint titer
5.0×10^5
4.0×10^5
3.0×10^5
2.0×10^5
1.0×10^5
0
PBS
LV
Serum Endpoint titer
1.5×10^6
1.0×10^6
5.0×10^5
0
PBS
rP + GLA

FIG. 2

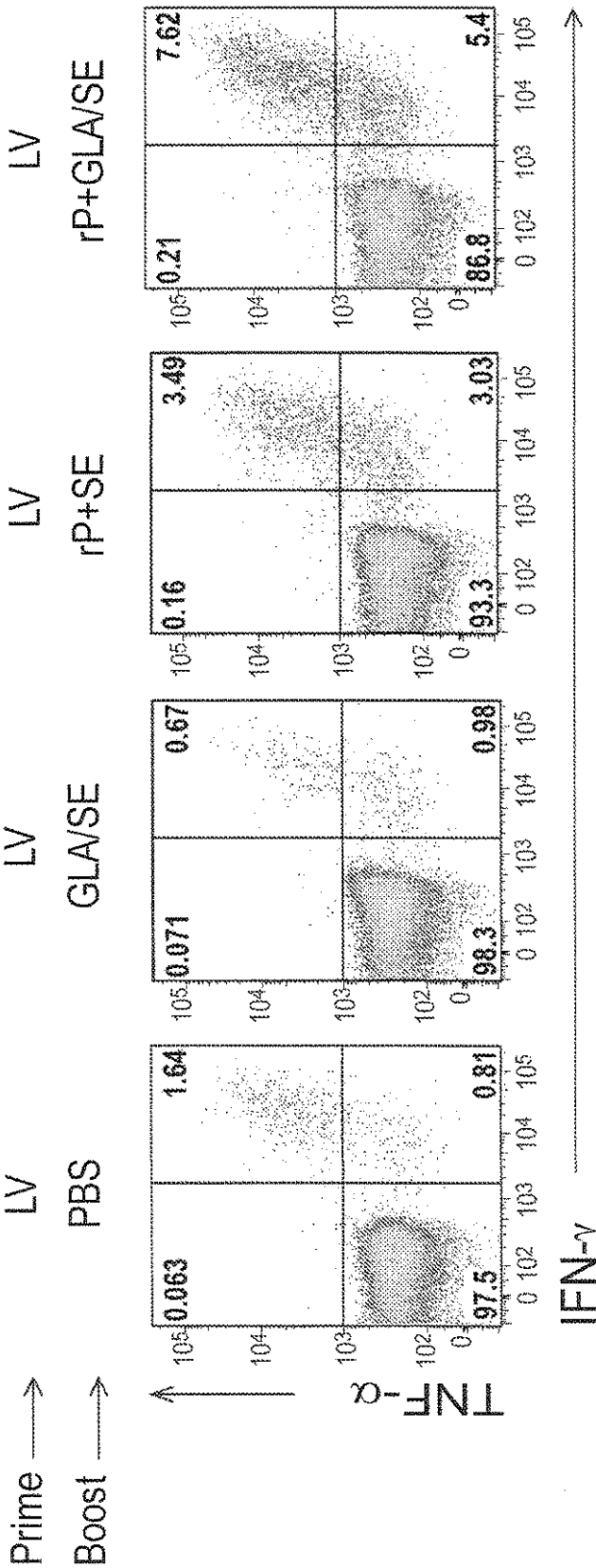

Prime
Boost
LV
PBS
LV
GLA/SE
LV
rP+SE
LV
rP+GLA/SE
TNF-α
IFN-γ
0.063
97.5
1.64
0.81
0.071
98.3
0.67
0.98
0.16
93.3
3.49
3.03
0.21
86.8
7.62
5.4

FIG. 3

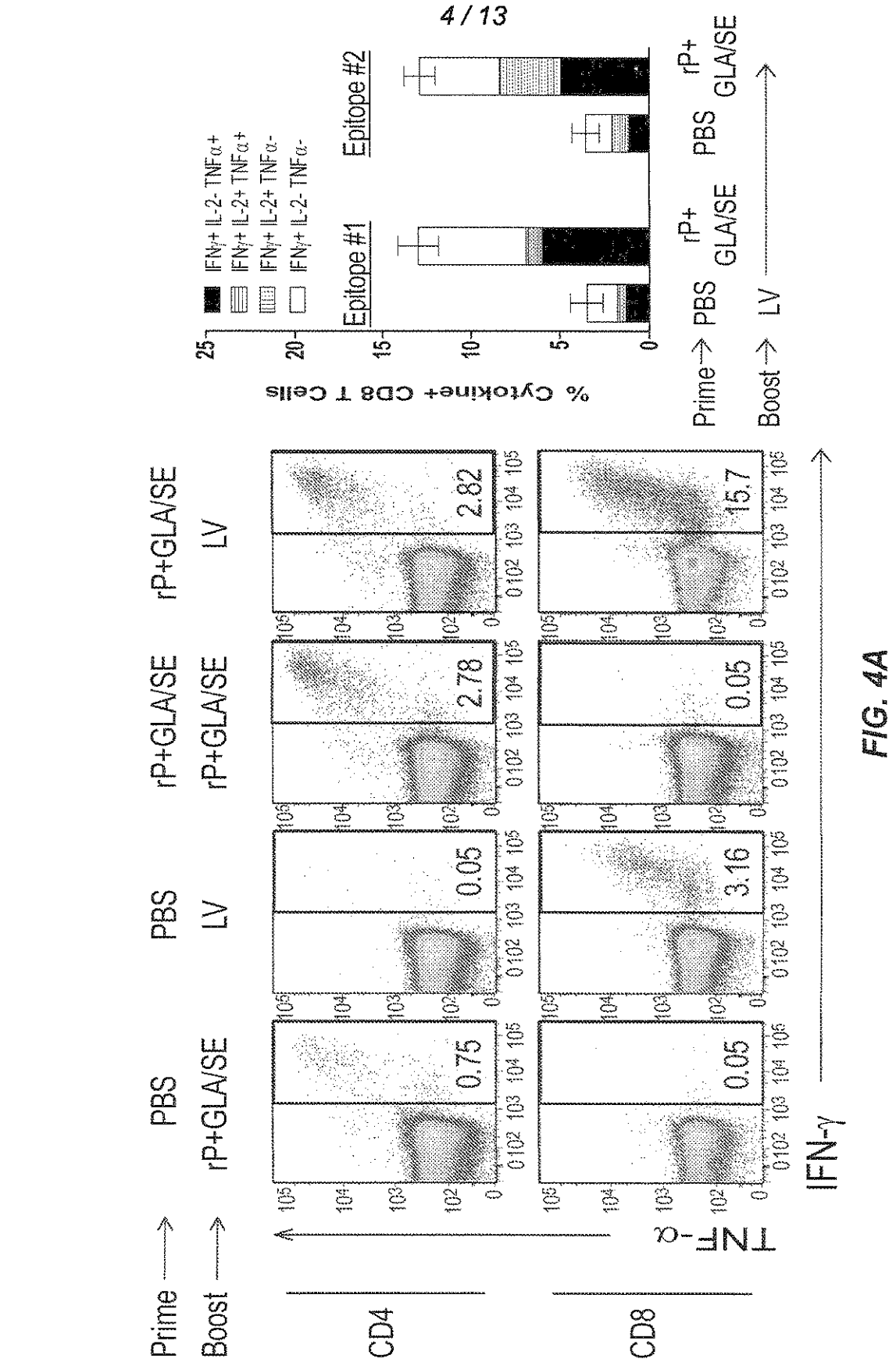

% Cytokine+ CD8 T Cells
IFNγ+ IL-2- TNFα+
IFNγ+ IL-2+ TNFα+
IFNγ+ IL-2+ TNFα-
IFNγ+ IL-2- TNFα-
Epitope #1
Epitope #2
Prime → PBS rP+ GLA/SE PBS rP+ GLA/SE
Boost → LV LV
Prime → PBS rP+GLA/SE PBS rP+GLA/SE
Boost → rP+GLA/SE LV rP+GLA/SE LV
CD4
CD8
TNF-α
IFN-γ
0.75
0.05
0.05
2.78
3.16
0.05
2.82
15.7

FIG. 4A

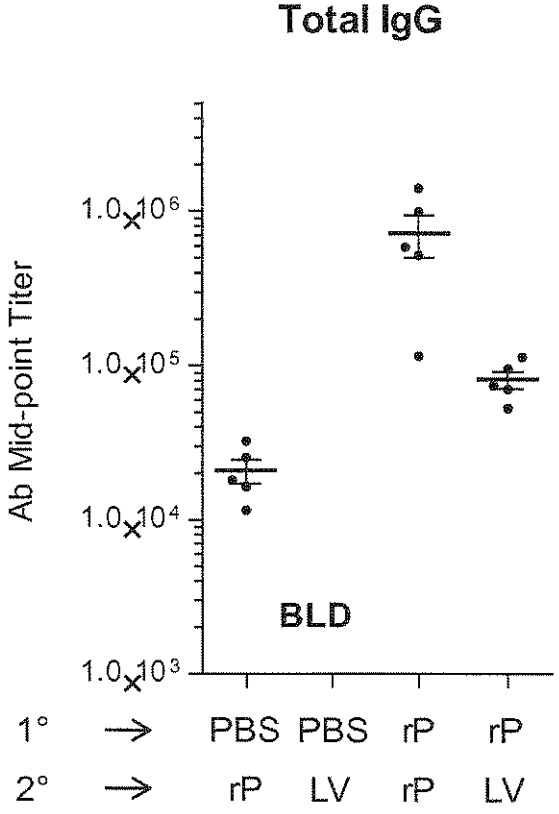

Total IgG
Ab Mid-point Titer
1.0x10^6
1.0x10^5
1.0x10^4
1.0x10^3
BLD
1° → PBS PBS rP rP
2° → rP LV rP LV

FIG. 4B

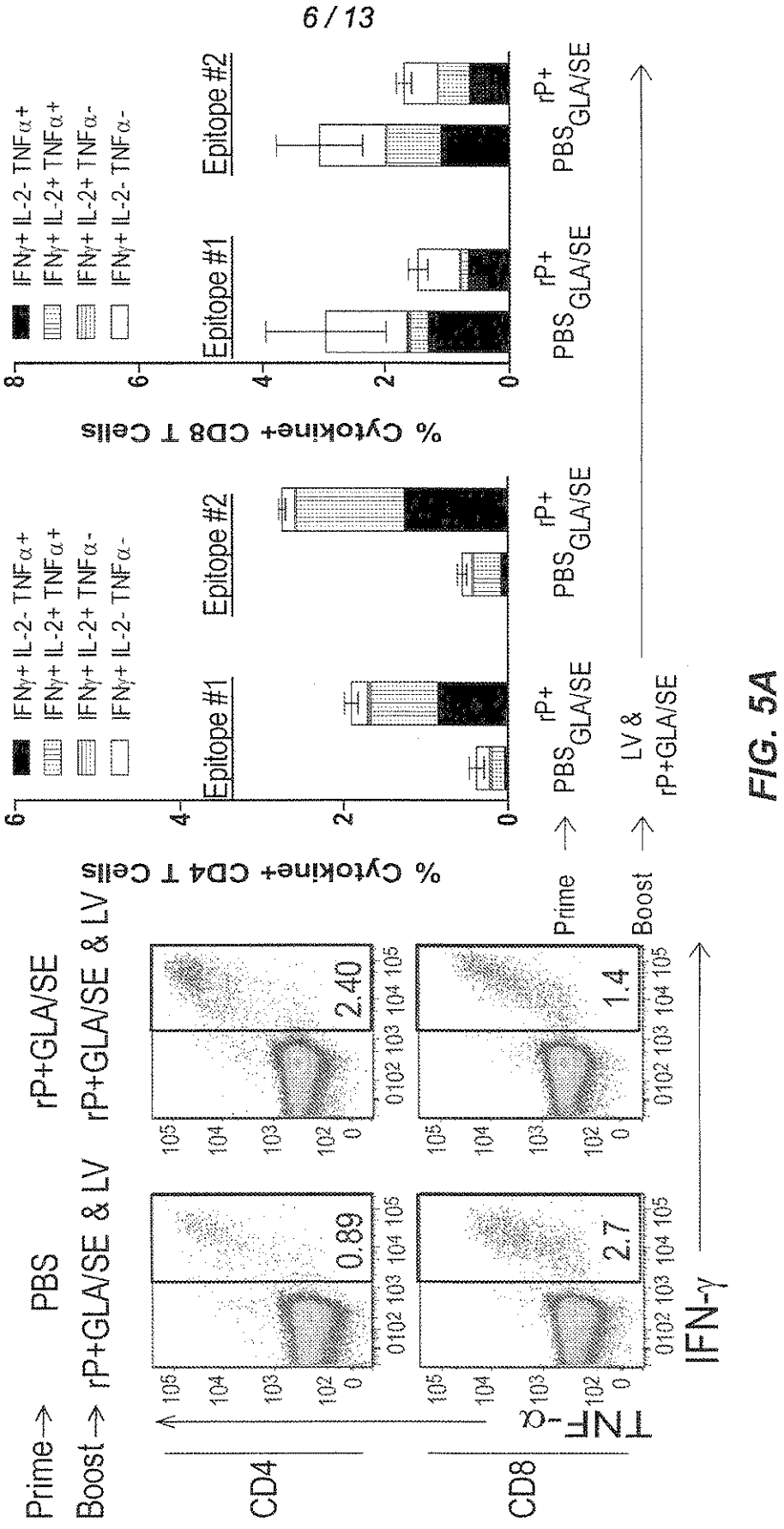

Prime→ PBS rP+GLA/SE
Boost→ rP+GLA/SE & LV rP+GLA/SE & LV
CD4
CD8
TNF-α
IFN-γ
0.89
2.40
2.7
1.4
% Cytokine+ CD4 T Cells
% Cytokine+ CD8 T Cells
IFNγ+ IL-2- TNFα+
IFNγ+ IL-2+ TNFα+
IFNγ+ IL-2+ TNFα-
IFNγ+ IL-2- TNFα-
Epitope #1
Epitope #2
Prime
Boost
rP+ PBS GLA/SE
LV & rP+GLA/SE

FIG. 5A

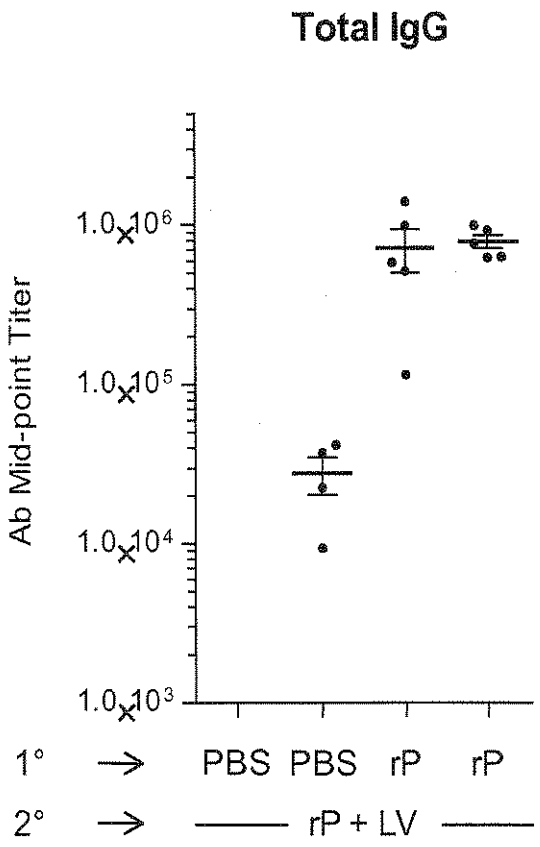

Total IgG
Ab Mid-point Titer
1.0x10^6
1.0x10^5
1.0x10^4
1.0x10^3
1°
PBS PBS rP rP
2°
rP + LV

FIG. 5B

Prime	1st Boost	2nd Boost
Immunogen	Vector encoding immunogen	None
Immunogen	Vector encoding immunogen	Immunogen
Immunogen	Immunogen	Vector encoding immunogen
Immunogen	Immunogen and Vector encoding immunogen	None
Immunogen and Vector encoding immunogen	None	None
Immunogen and Vector encoding immunogen	Immunogen and Vector encoding immunogen	None
Vector encoding immunogen	Immunogen	None
Vector encoding immunogen	Immunogen	Vector encoding immunogen
Immunogen + adjuvant	Vector encoding immunogen	None
Immunogen + adjuvant	Vector encoding immunogen	Immunogen + adjuvant
Immunogen + adjuvant	Immunogen + adjuvant	Vector encoding immunogen
Immunogen + adjuvant	Immunogen + adjuvant and Vector encoding immunogen	None
Immunogen + adjuvant and Vector encoding immunogen	None	None
Immunogen + adjuvant and Vector encoding immunogen	Immunogen + adjuvant and Vector encoding immunogen	None
Vector encoding immunogen	Immunogen + adjuvant	None
Vector encoding immunogen	Immunogen + adjuvant	Vector encoding immunogen

FIG. 6

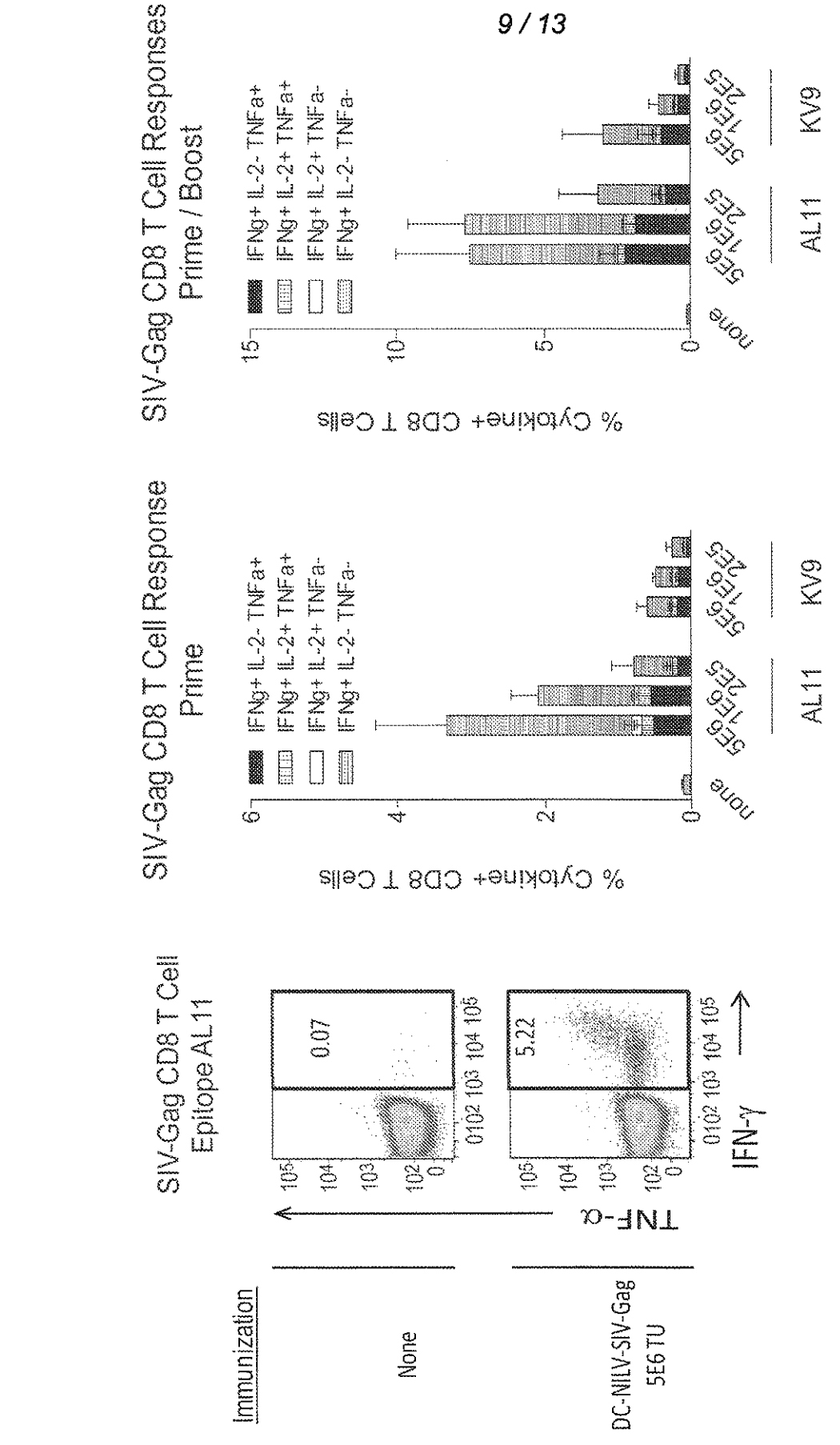

SIV-Gag CD8 T Cell Response Prime / Boost
SIV-Gag CD8 T Cell Response Prime
SIV-Gag CD8 T Cell Epitope AL11
Immunization
None
DC-NILV-SIV-Gag 5E6 TU
IFNg+ IL-2- TNFa+
IFNg+ IL-2+ TNFa+
IFNg+ IL-2+ TNFa-
IFNg+ IL-2- TNFa-
% Cytokine+ CD8 T Cells
none
5E6
5E6/1E6
5E6/1E6/2E5
AL11
KV9
TNF-α
IFN-γ
0.07
5.22

FIG. 7

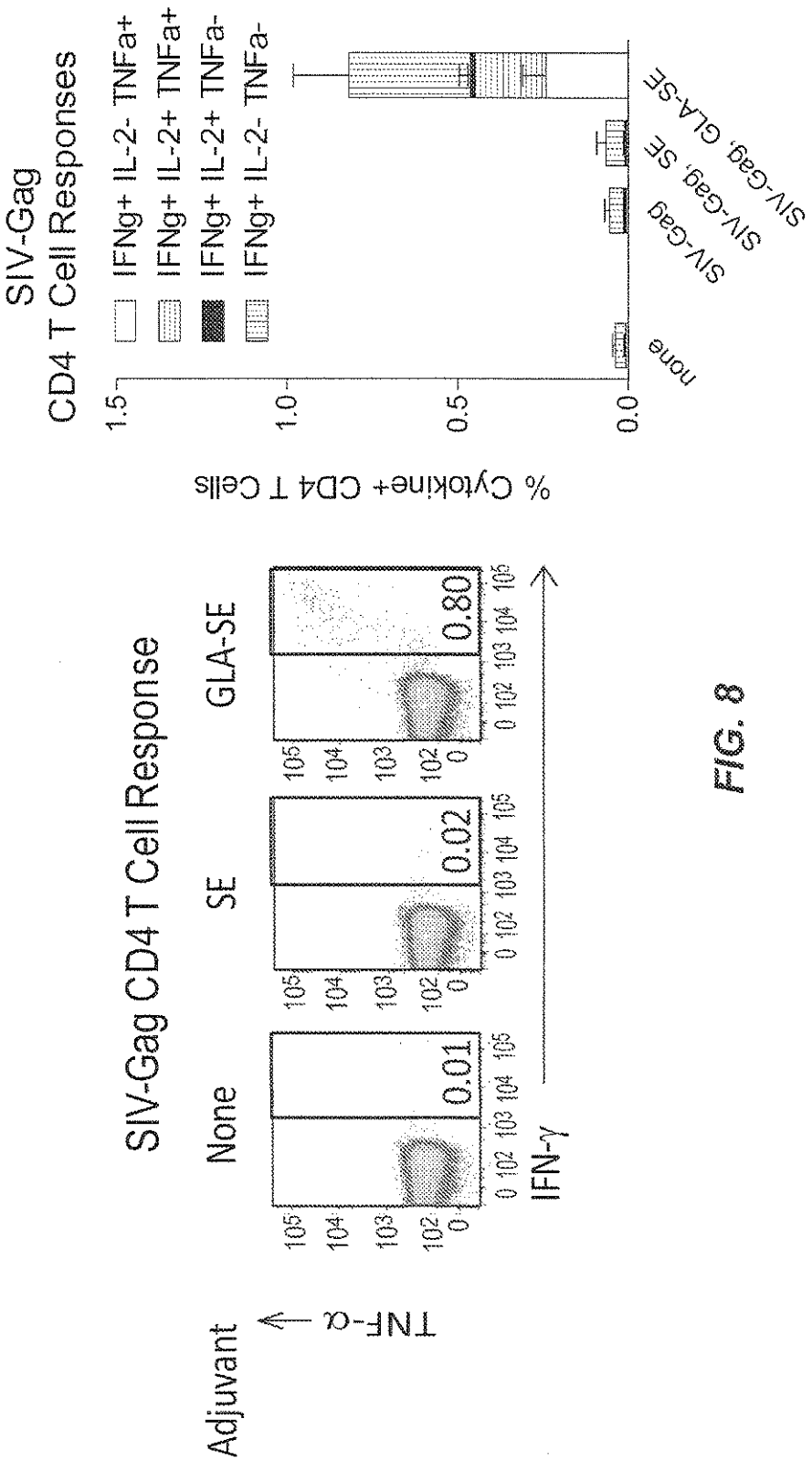

SIV-Gag
CD4 T Cell Responses
IFNg+ IL-2- TNFa+
IFNg+ IL-2+ TNFa+
IFNg+ IL-2+ TNFa-
IFNg+ IL-2- TNFa-
% Cytokine+ CD4 T Cells
1.5
1.0
0.5
0.0
none
SIV-Gag
SIV-Gag, SE
SIV-Gag, GLA-SE
SIV-Gag CD4 T Cell Response
None
SE
GLA-SE
Adjuvant
TNF-α
IFN-γ
0.01
0.02
0.80
0
10²
10³
10⁴
10⁵

FIG. 8

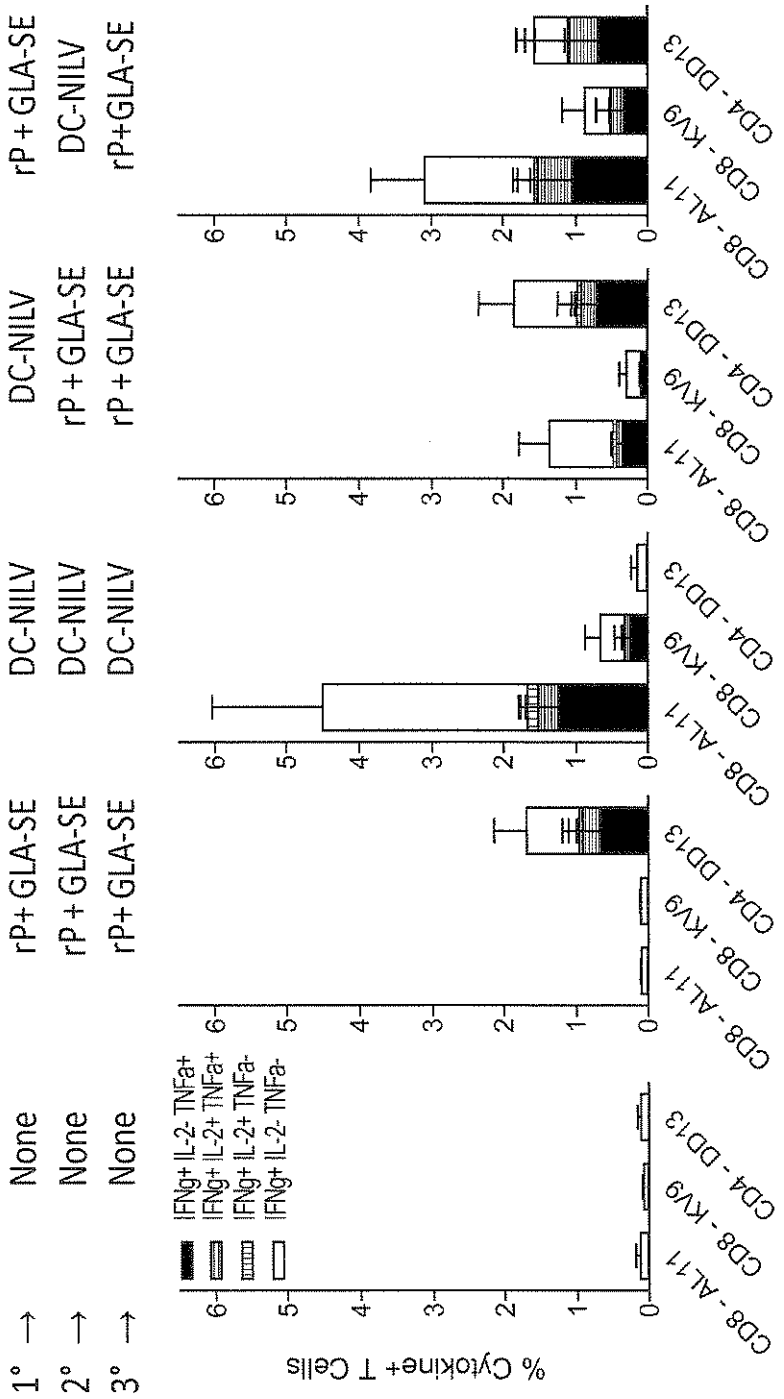

1° → None rP+ GLA-SE DC-NILV rP + GLA-SE
2° → None rP + GLA-SE DC-NILV rP + GLA-SE
3° → None rP+ GLA-SE DC-NILV rP+GLA-SE
IFNg+ IL-2- TNFa+
IFNg+ IL-2+ TNFa+
IFNg+ IL-2+ TNFa-
IFNg+ IL-2- TNFa-
% Cytokine+ T Cells
0
1
2
3
4
5
6
CD8 - AL11
CD8 - KV9
CD4 - DD13

FIG. 9

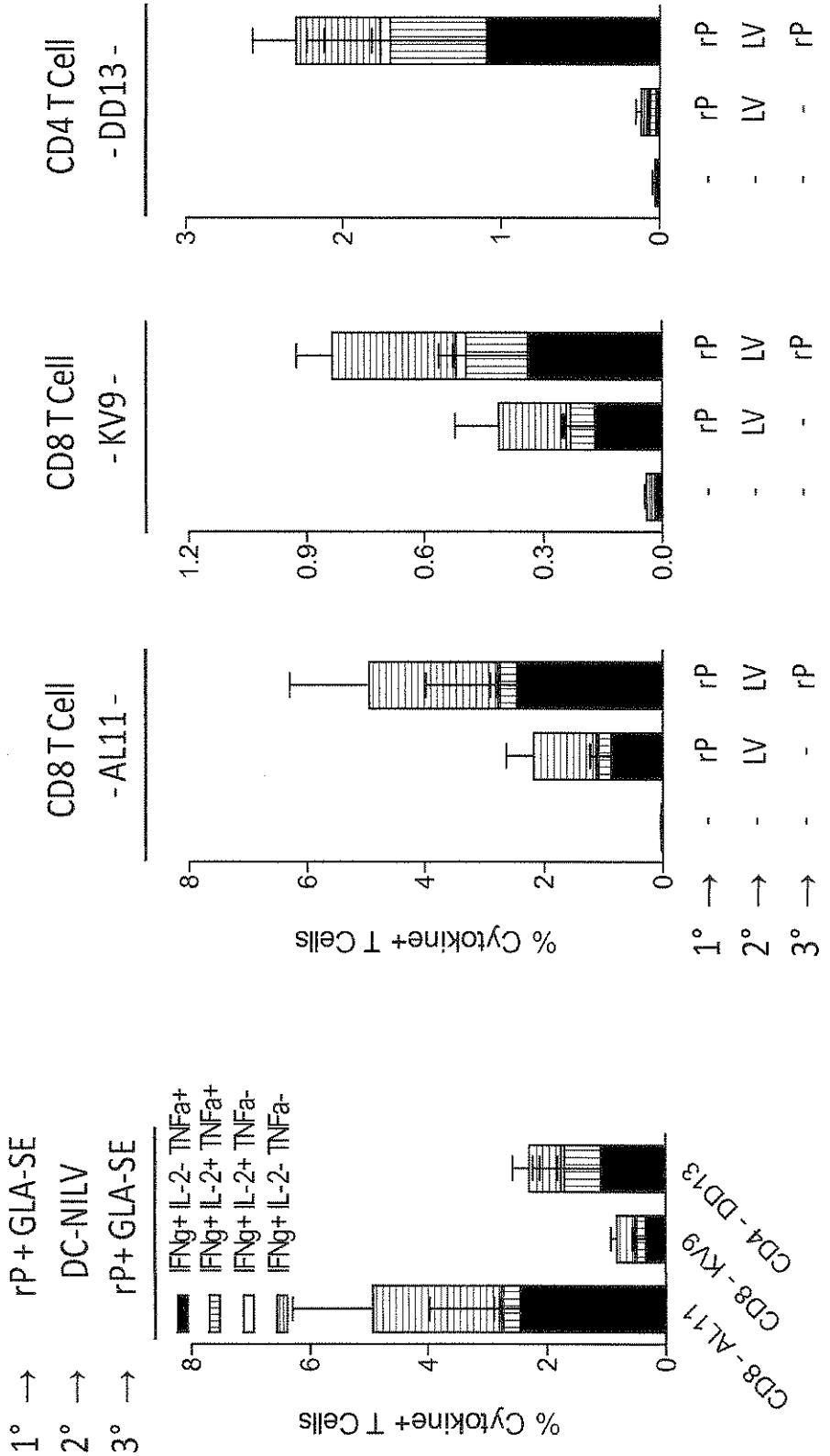

CD8 T Cell
-AL11-
CD8 T Cell
-KV9-
CD4 T Cell
-DD13-
% Cytokine+ T Cells
1° → - rP rP
2° → - LV LV
3° → - - rP
1° → rP + GLA-SE
2° → DC-NILV
3° → rP+ GLA-SE
IFNg+ IL-2- TNFa+
IFNg+ IL-2+ TNFa+
IFNg+ IL-2+ TNFa-
IFNg+ IL-2- TNFa-
CD8 - AL11
CD8 - KV9
CD4 - DD13

FIG. 10

SIV-Gaq 289-333 SLP

GPKEPFQSYVDRFYKSLRAEQTD**AAVKNWMTQTL**LIQNANPDCKL

SEQ ID NO: 42

FIG. 11