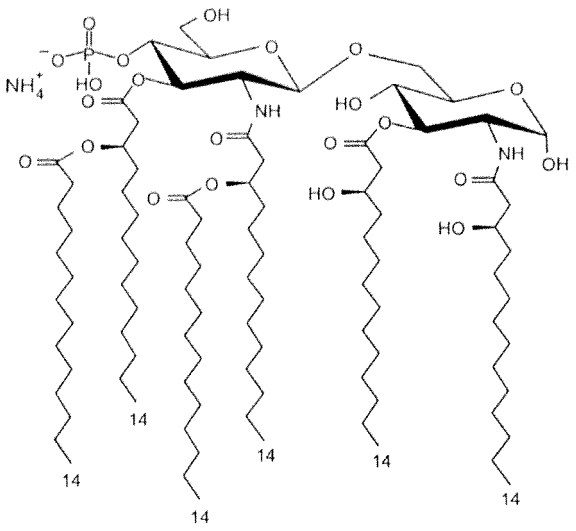

OH
O
O
O

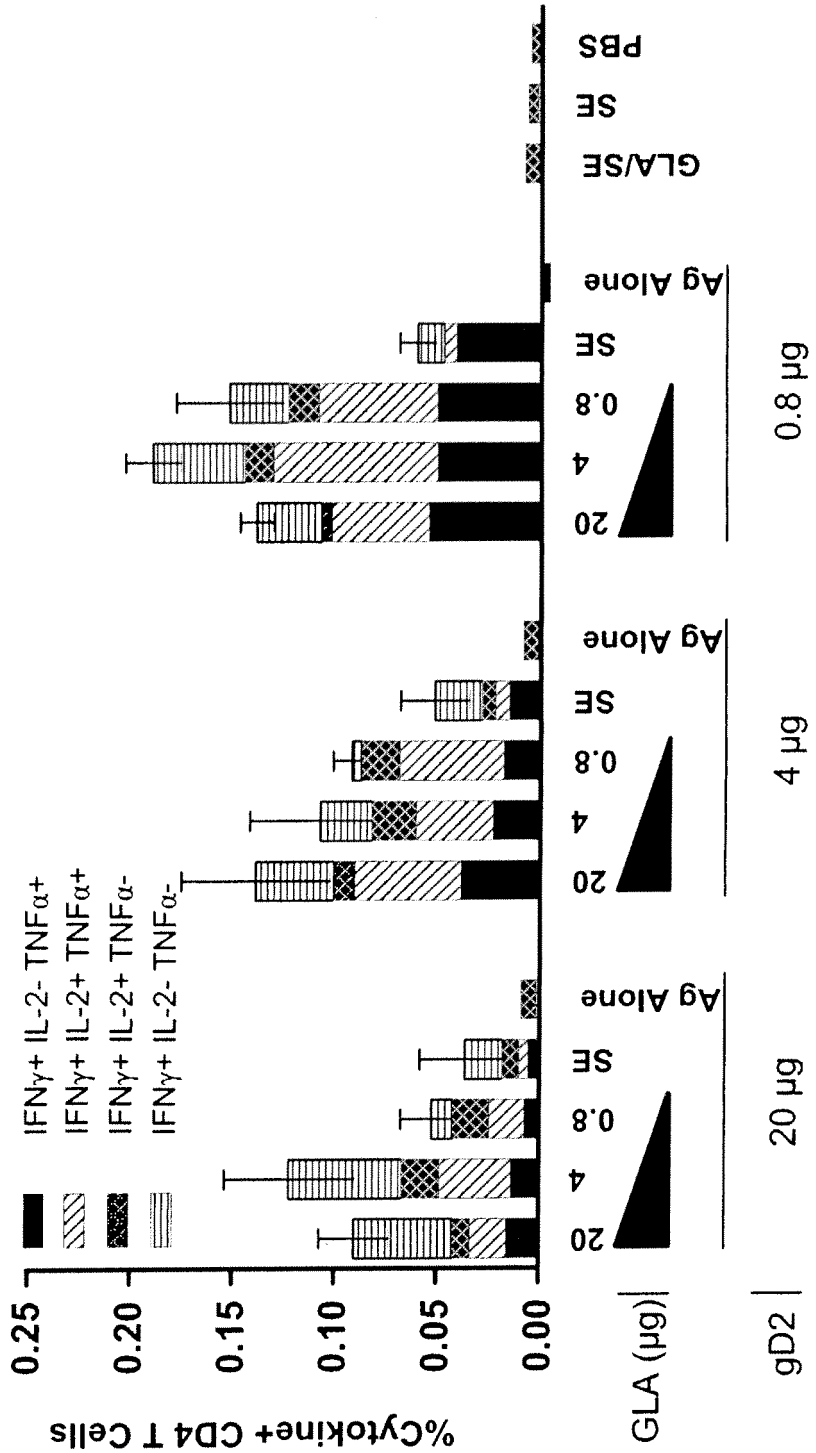

%Cytokine+ CD4 T Cells
0.25
0.20
0.15
0.10
0.05
0.00
IFNγ+ IL-2- TNFα+
IFNγ+ IL-2+ TNFα+
IFNγ+ IL-2+ TNFα-
IFNγ+ IL-2- TNFα-
GLA (μg)
gD2
20 μg
4 μg
0.8 μg
20
4
0.8
SE
Ag Alone
GLA/SE
SE
PBS

FIG. 2

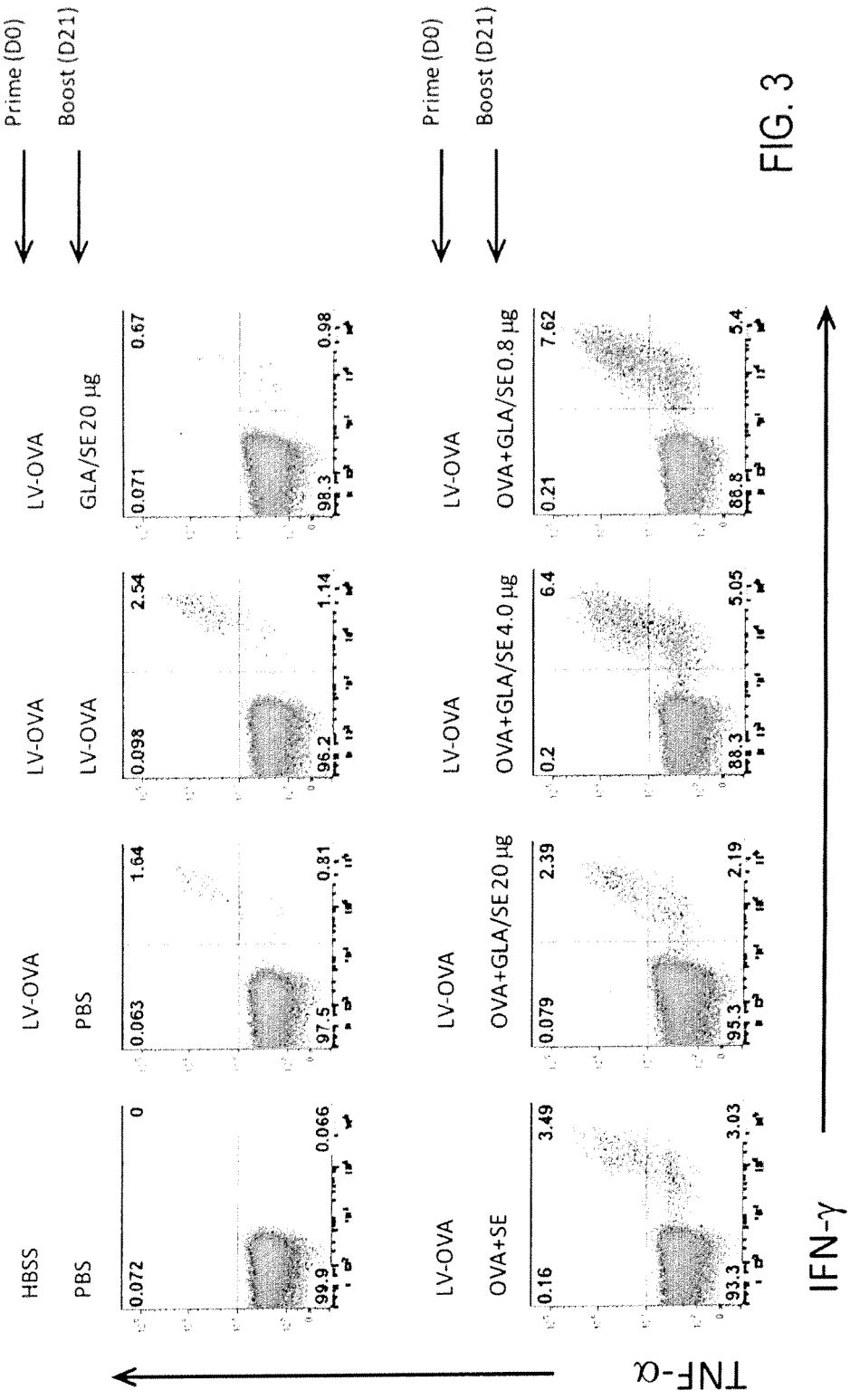

Prime (D0)
Boost (D21)
HBSS
PBS
LV-OVA
PBS
LV-OVA
LV-OVA
GLA/SE 20 µg
LV-OVA
OVA+SE
LV-OVA
OVA+GLA/SE 20 µg
LV-OVA
OVA+GLA/SE 4.0 µg
LV-OVA
OVA+GLA/SE 0.8 µg
0.072
0
99.9
0.066
0.063
1.64
97.5
0.81
0.098
2.54
96.2
1.14
0.071
0.67
98.3
0.98
0.16
3.49
93.3
3.03
0.079
2.39
95.3
2.19
0.2
6.4
88.3
5.05
0.21
7.62
86.8
5.4
TNF-α
IFN-γ

FIG. 3

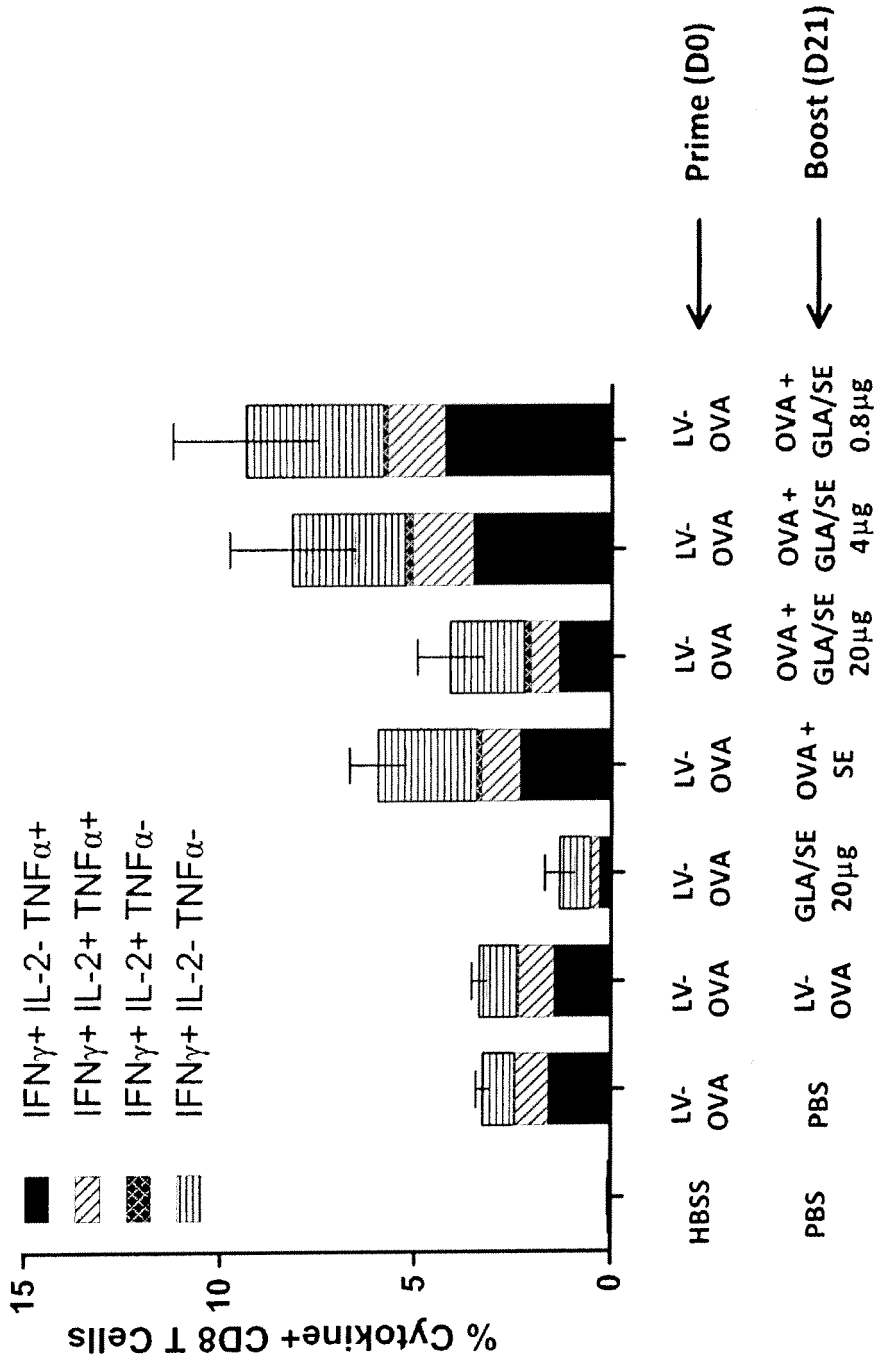

OVA 257
IFNγ+ IL-2- TNFα+
IFNγ+ IL-2+ TNFα+
IFNγ+ IL-2+ TNFα-
IFNγ+ IL-2- TNFα-
% Cytokine+ CD8 T Cells
15
10
5
0
HBSS
LV-OVA
LV-OVA
LV-OVA
LV-OVA
LV-OVA
LV-OVA
LV-OVA
PBS
PBS
LV-OVA
GLA/SE 20μg
OVA + SE
OVA + GLA/SE 20μg
OVA + GLA/SE 4μg
OVA + GLA/SE 0.8μg
Prime (D0)
Boost (D21)

FIG. 4

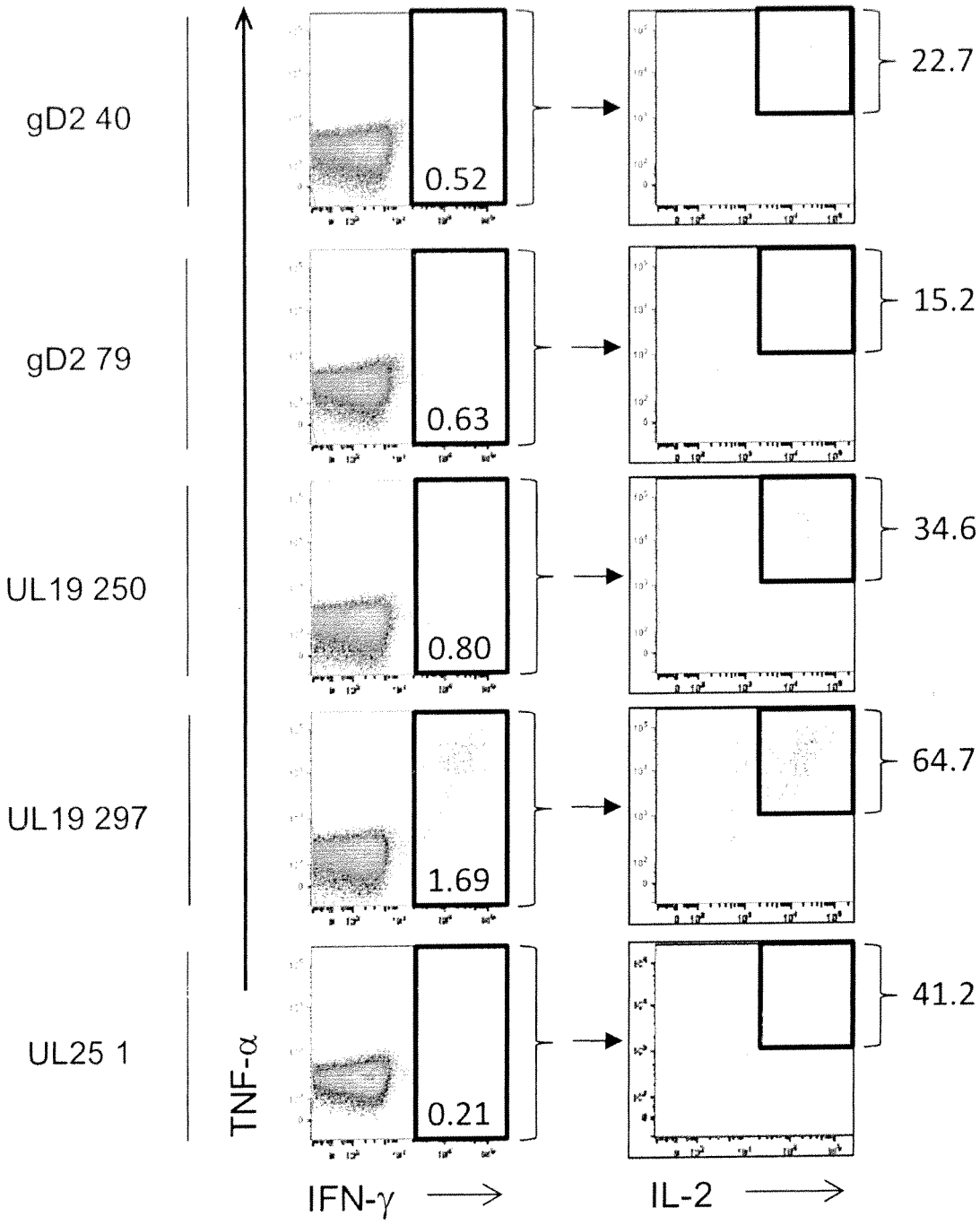

gD2 40
gD2 79
UL19 250
UL19 297
UL25 1
TNF-α
IFN-γ
IL-2
0.52
0.63
0.80
1.69
0.21
22.7
15.2
34.6
64.7
41.2

FIG. 5A

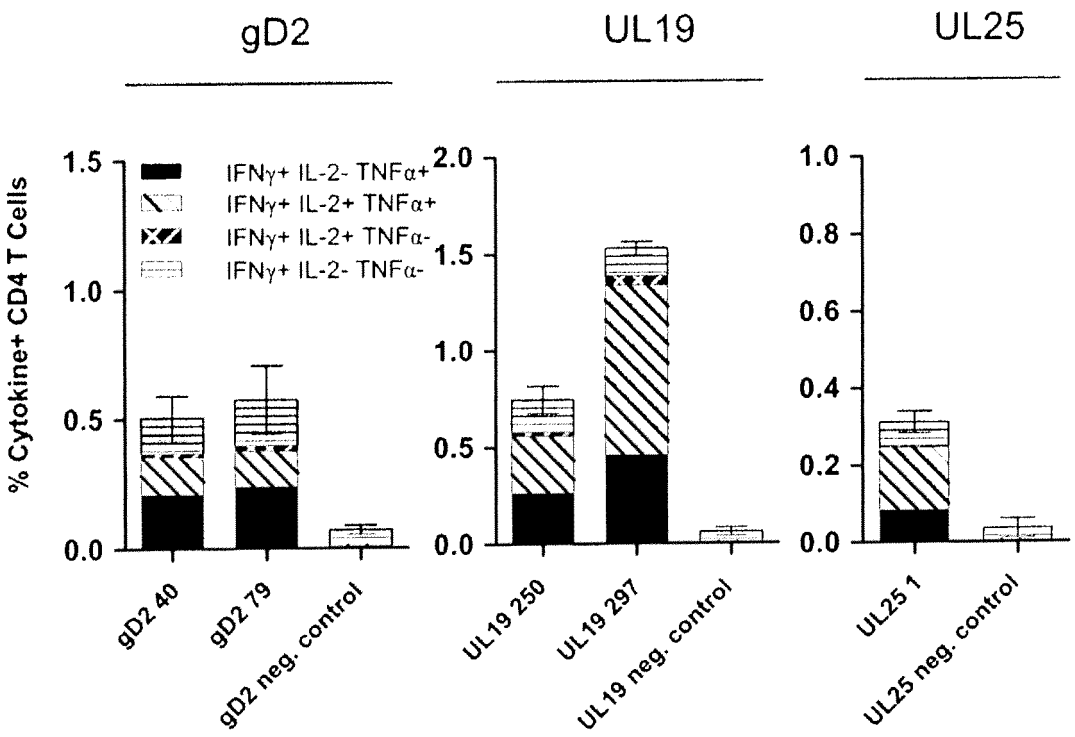

gD2
UL19
UL25
% Cytokine+ CD4 T Cells
IFNγ+ IL-2- TNFα+
IFNγ+ IL-2+ TNFα+
IFNγ+ IL-2+ TNFα-
IFNγ+ IL-2- TNFα-
1.5
1.0
0.5
0.0
2.0
1.5
1.0
0.5
0.0
1.0
0.8
0.6
0.4
0.2
0.0
gD2 40
gD2 79
gD2 neg. control
UL19 250
UL19 297
UL19 neg. control
UL25 1
UL25 neg. control
15 - mer Peptide

FIG. 5B

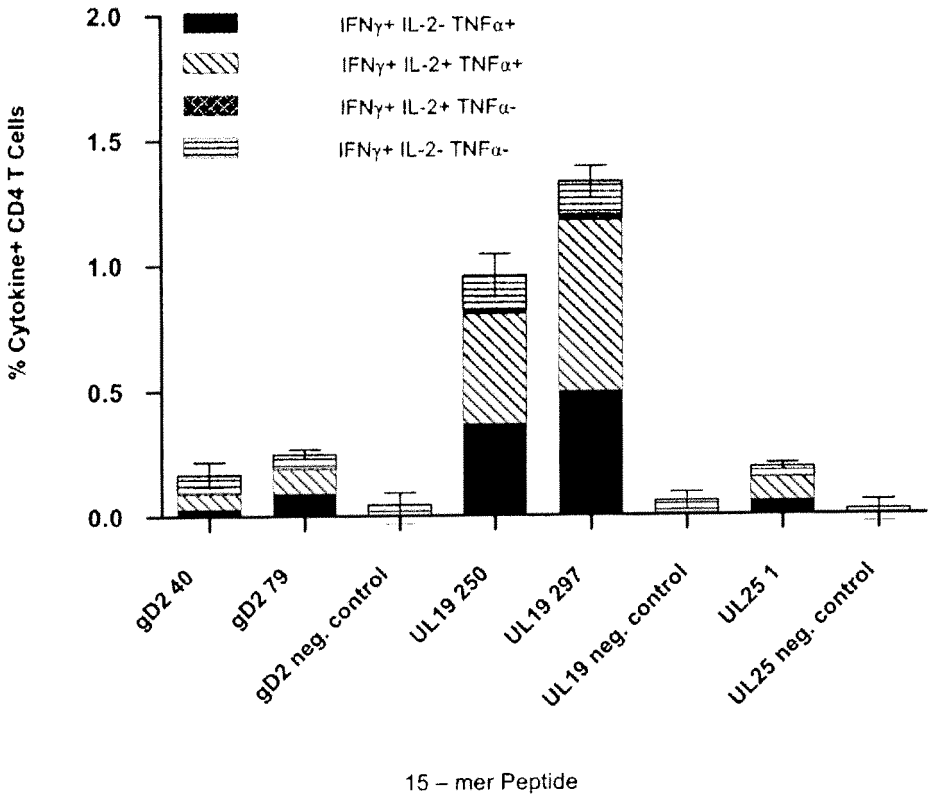

2.0
1.5
1.0
0.5
0.0
% Cytokine+ CD4 T Cells
IFNγ+ IL-2- TNFα+
IFNγ+ IL-2+ TNFα+
IFNγ+ IL-2+ TNFα-
IFNγ+ IL-2- TNFα-
gD2 40
gD2 79
gD2 neg. control
UL19 250
UL19 297
UL19 neg. control
UL25 1
UL25 neg. control
15 – mer Peptide

FIG. 6A

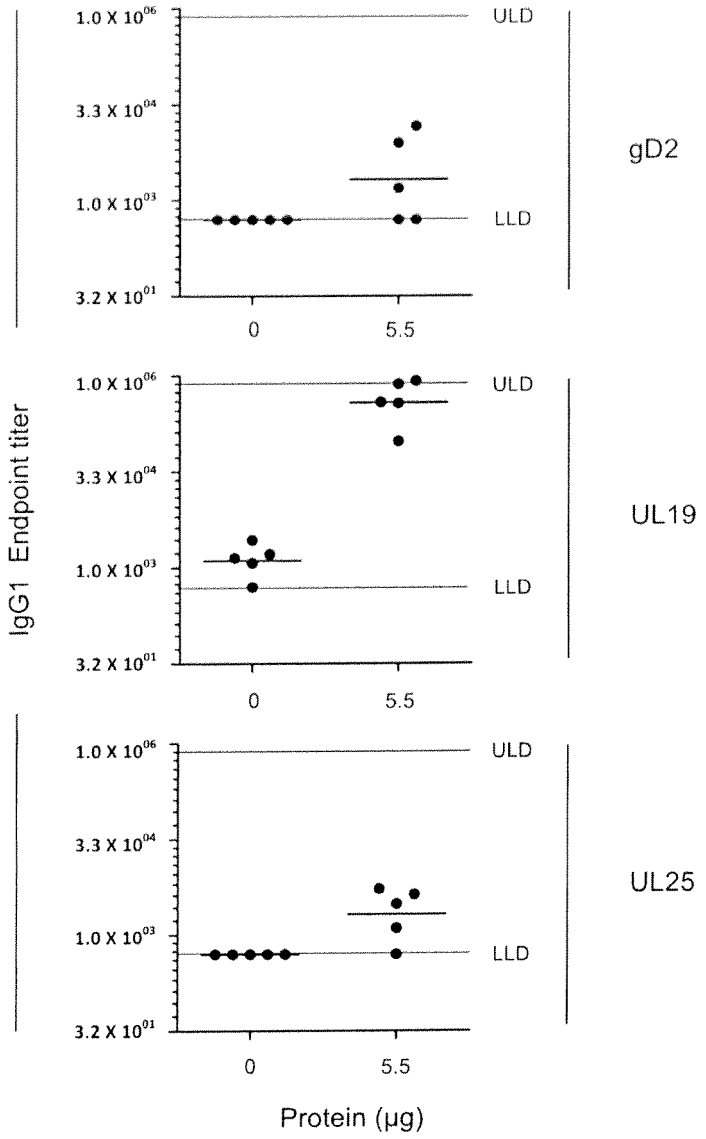

IgG1 Endpoint titer
1.0 X 10^06
3.3 X 10^04
1.0 X 10^03
3.2 X 10^01
ULD
LLD
0
5.5
gD2
UL19
UL25
Protein (µg)

FIG. 6B

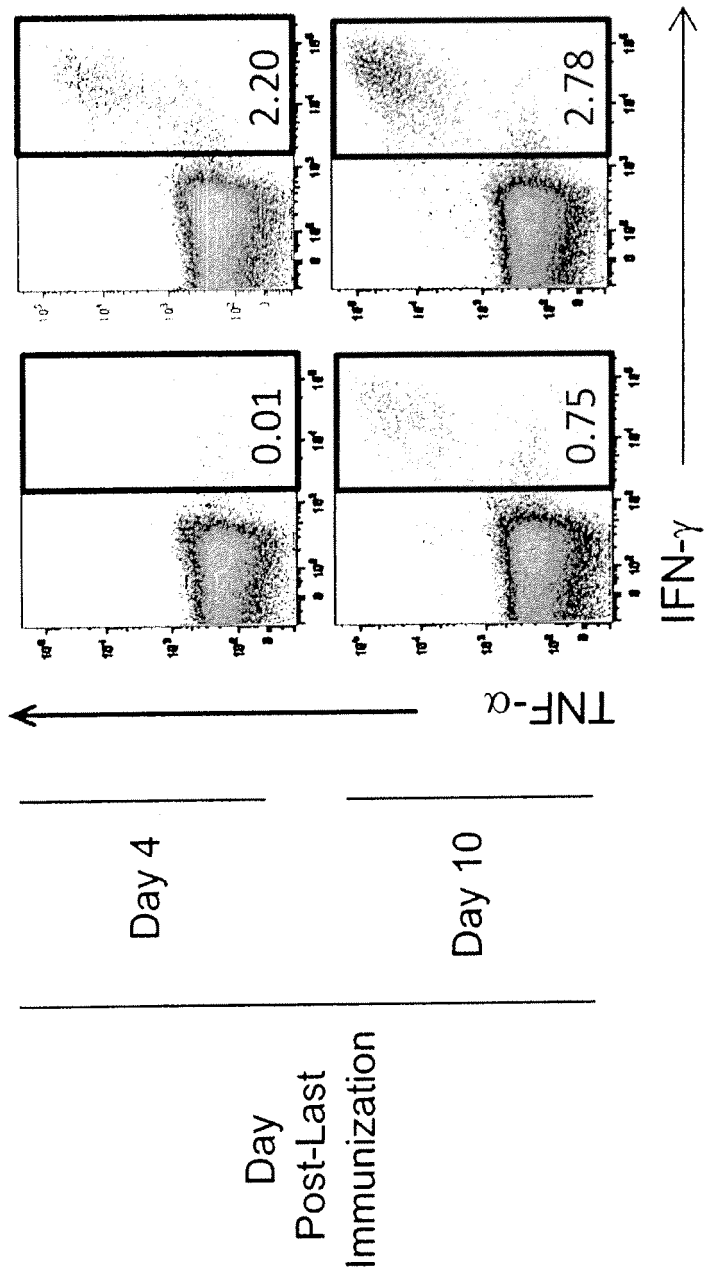

Day Post-Last Immunization
Day 4
Day 10
TNF-α
IFN-γ
0.01
0.75
2.20
2.78
Prime
Prime or Boost
-
UL19 + GLA/SE
UL19 + GLA/SE
UL19 + GLA/SE

FIG. 7A

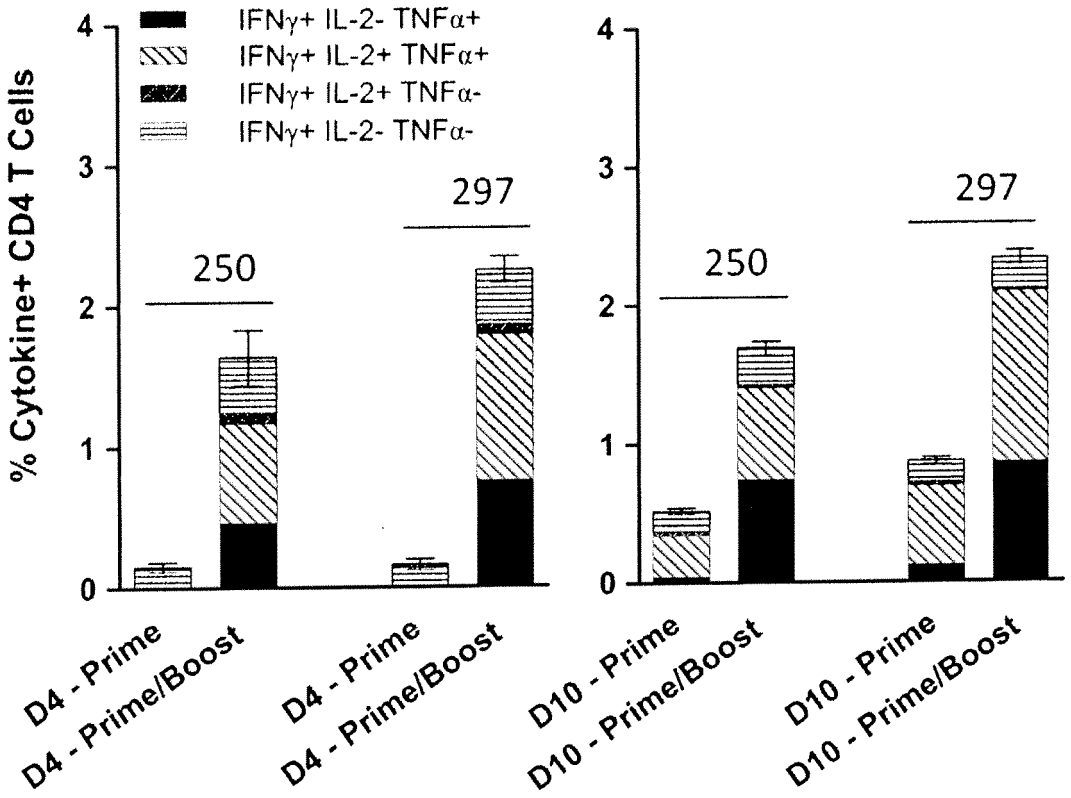

% Cytokine+ CD4 T Cells
IFNγ+ IL-2- TNFα+
IFNγ+ IL-2+ TNFα+
IFNγ+ IL-2+ TNFα-
IFNγ+ IL-2- TNFα-
250
297
250
297
0
1
2
3
4
D4 - Prime
D4 - Prime/Boost
D4 - Prime
D4 - Prime/Boost
D10 - Prime
D10 - Prime/Boost
D10 - Prime
D10 - Prime/Boost

FIG. 7B

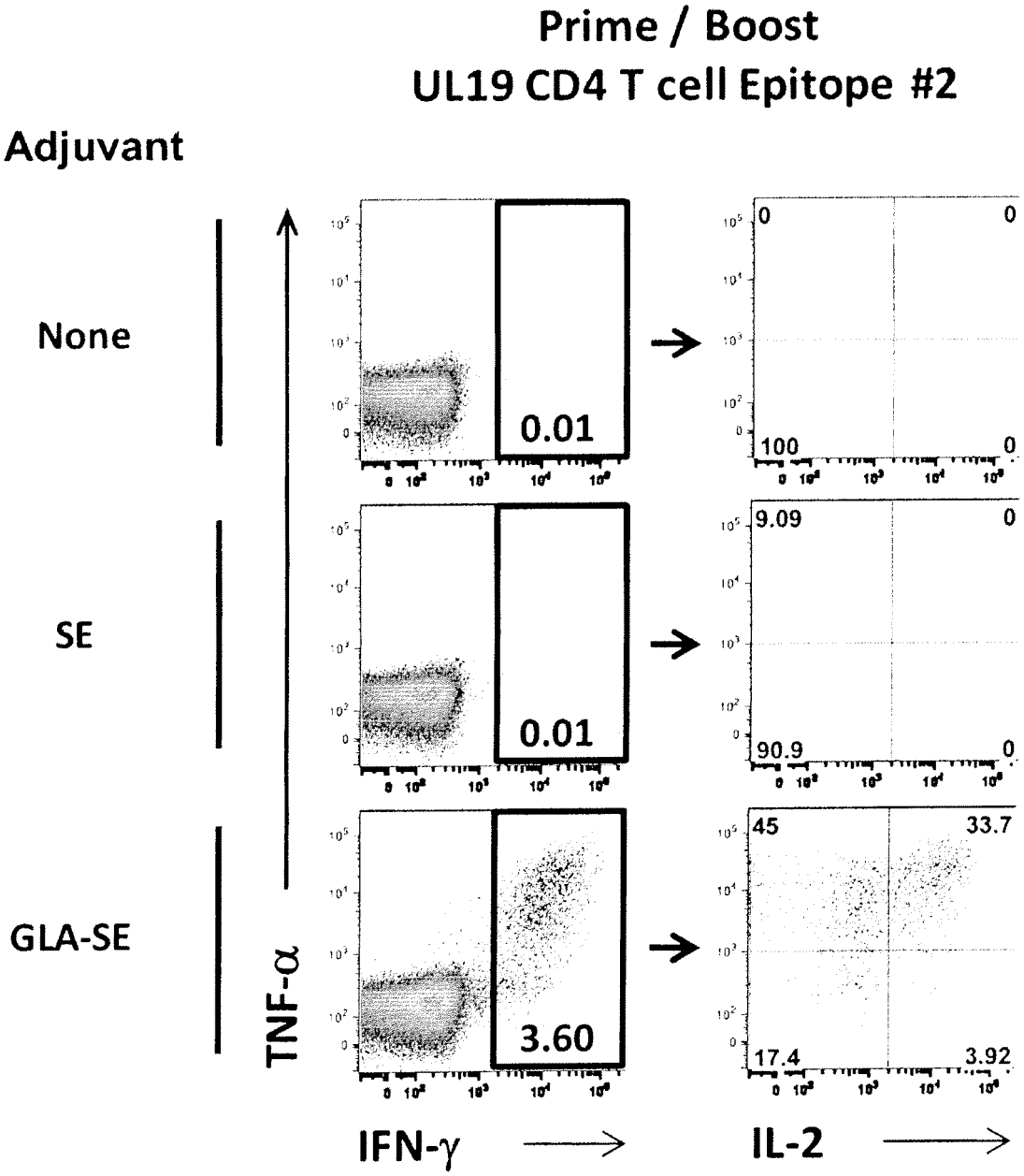

Prime / Boost
UL19 CD4 T cell Epitope #2
Adjuvant
None
SE
GLA-SE
TNF-α
IFN-γ
IL-2
0.01
0.01
3.60
0
0
100
0
9.09
0
90.9
0
45
33.7
17.4
3.92

FIG. 8A

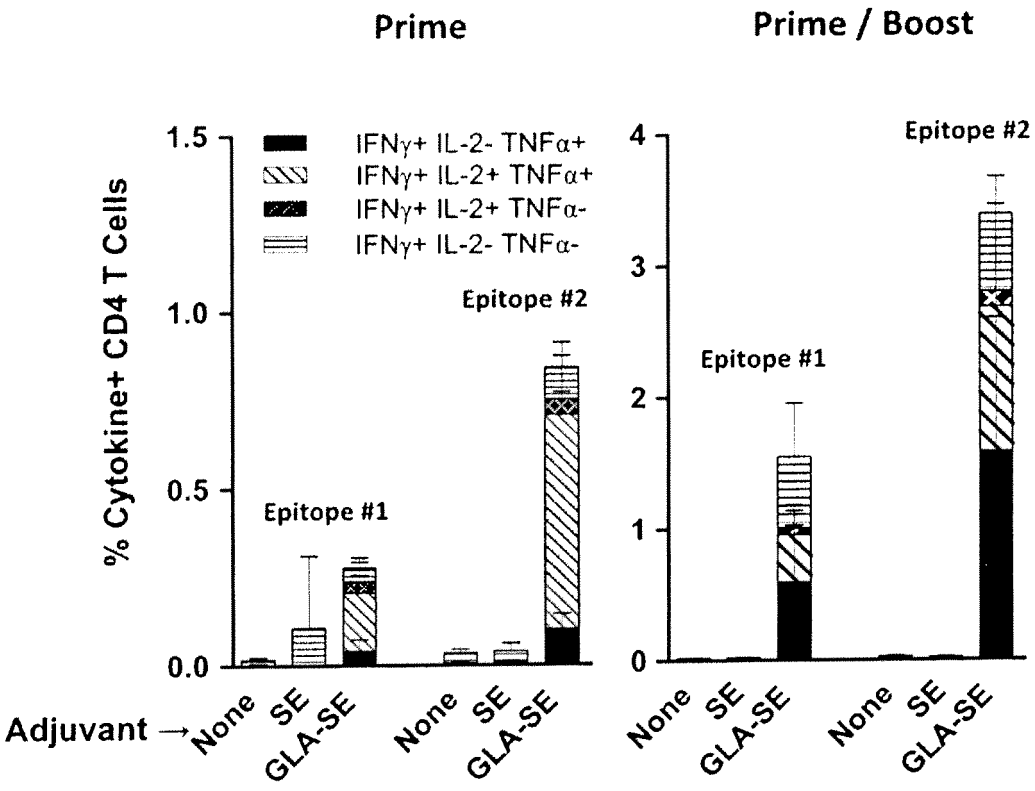

Prime
Prime / Boost
% Cytokine+ CD4 T Cells
IFNγ+ IL-2- TNFα+
IFNγ+ IL-2+ TNFα+
IFNγ+ IL-2+ TNFα-
IFNγ+ IL-2- TNFα-
Epitope #1
Epitope #2
Adjuvant →
None
SE
GLA-SE

FIG. 8B

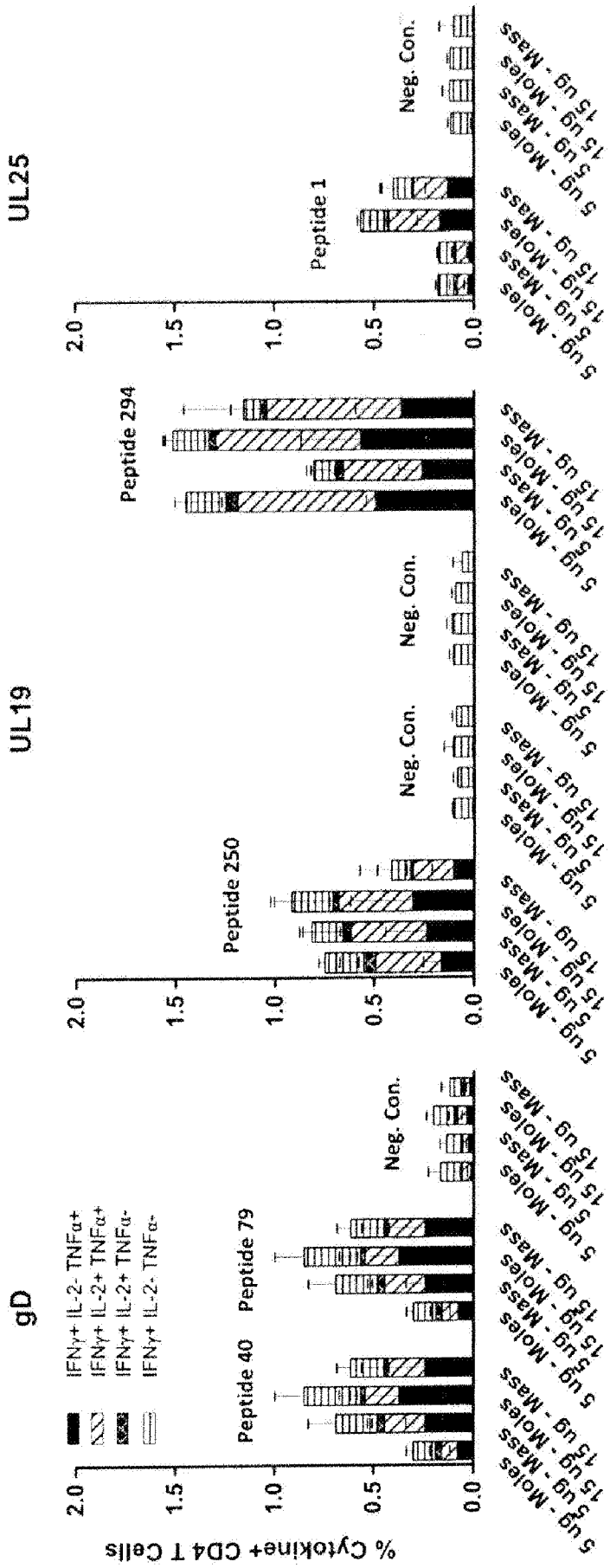
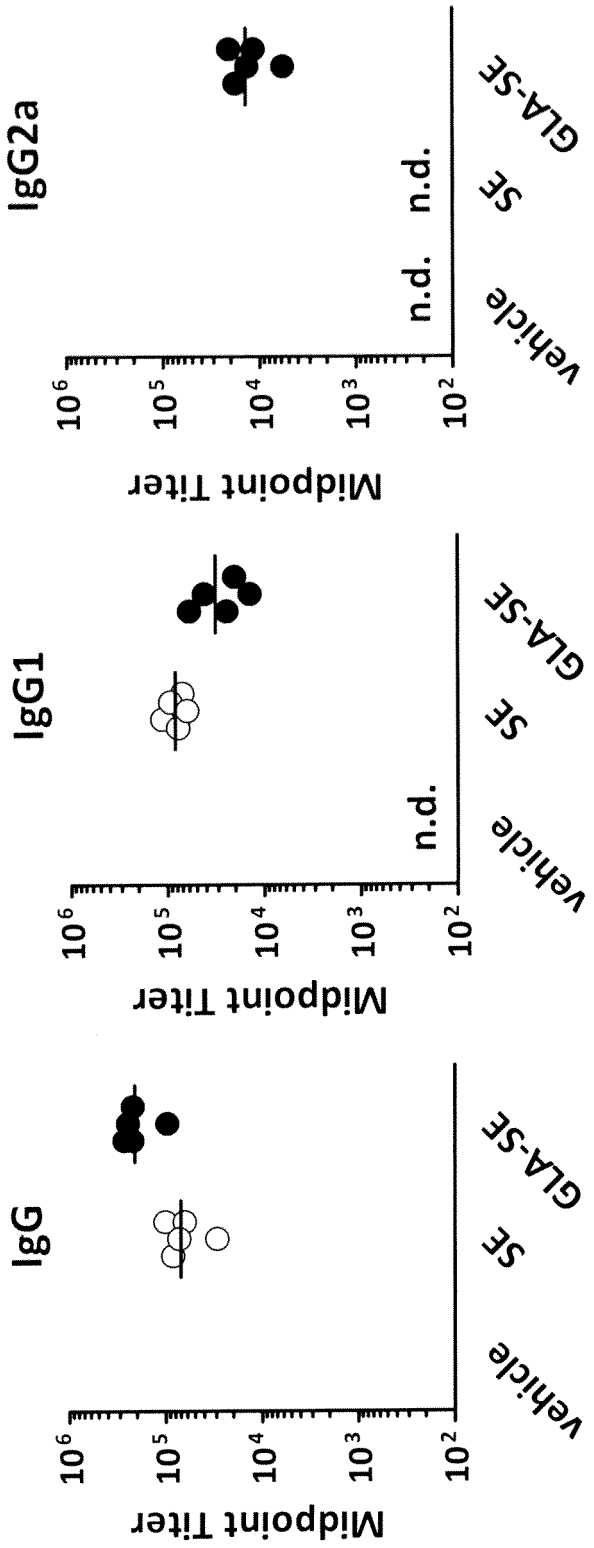


FIG. 9A

FIG. 9B

FIG. 9C


IgG
IgG1
IgG2a
Midpoint Titer
10^6
10^5
10^4
10^3
10^2
n.d.
n.d.
n.d.
Vehicle
SE
GLA-SE

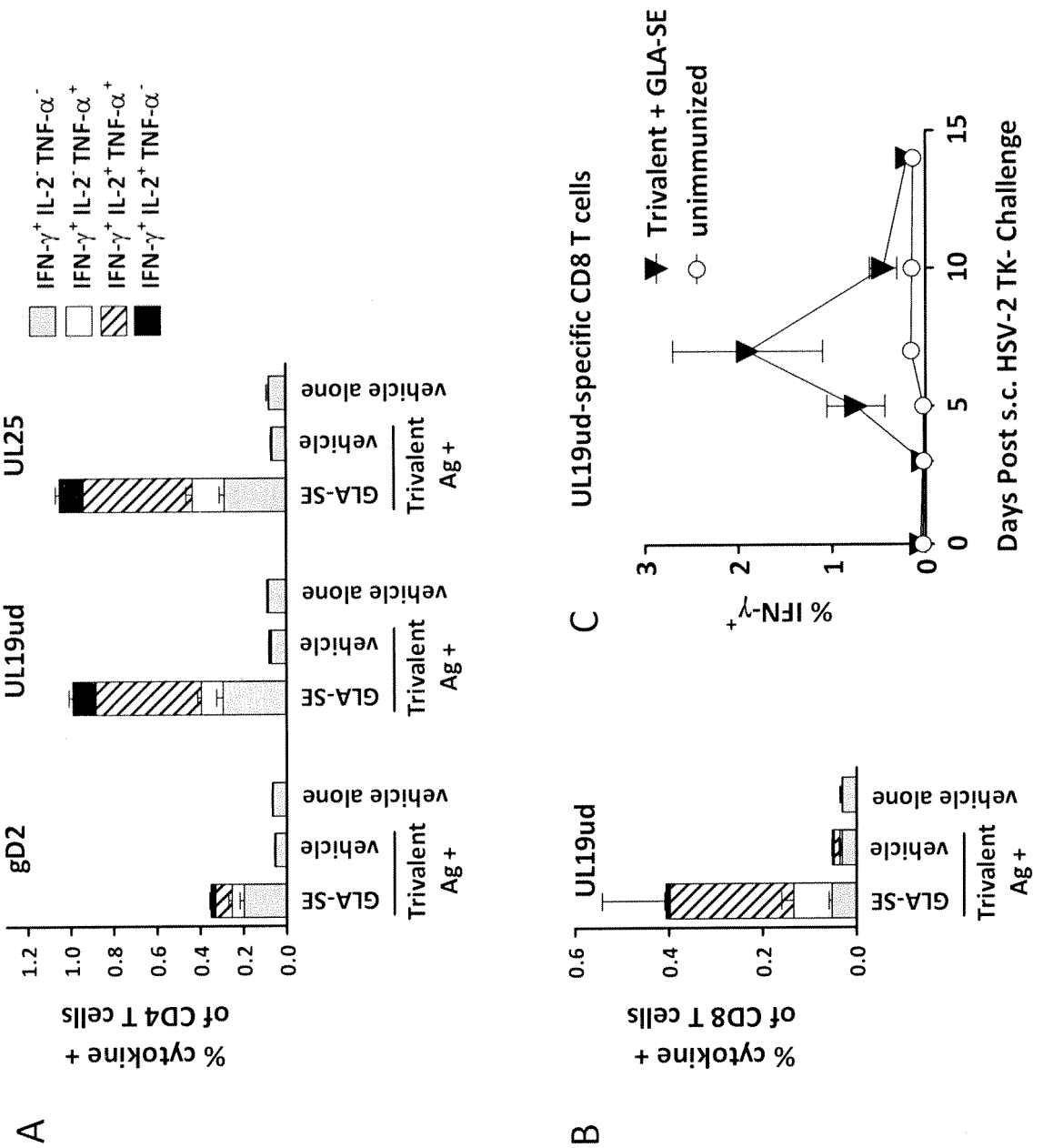

A
gD2
UL19ud
UL25
IFN-γ+ IL-2- TNF-α-
IFN-γ+ IL-2- TNF-α+
IFN-γ+ IL-2+ TNF-α+
IFN-γ+ IL-2+ TNF-α-
% cytokine + of CD4 T cells
1.2
1.0
0.8
0.6
0.4
0.2
0.0
GLA-SE
vehicle
vehicle alone
Trivalent Ag +
B
UL19ud
% cytokine + of CD8 T cells
0.6
0.4
0.2
0.0
C
UL19ud-specific CD8 T cells
Trivalent + GLA-SE
unimmunized
% IFN-γ+
3
2
1
0
0
5
10
15
Days Post s.c. HSV-2 TK- Challenge

Figure 11

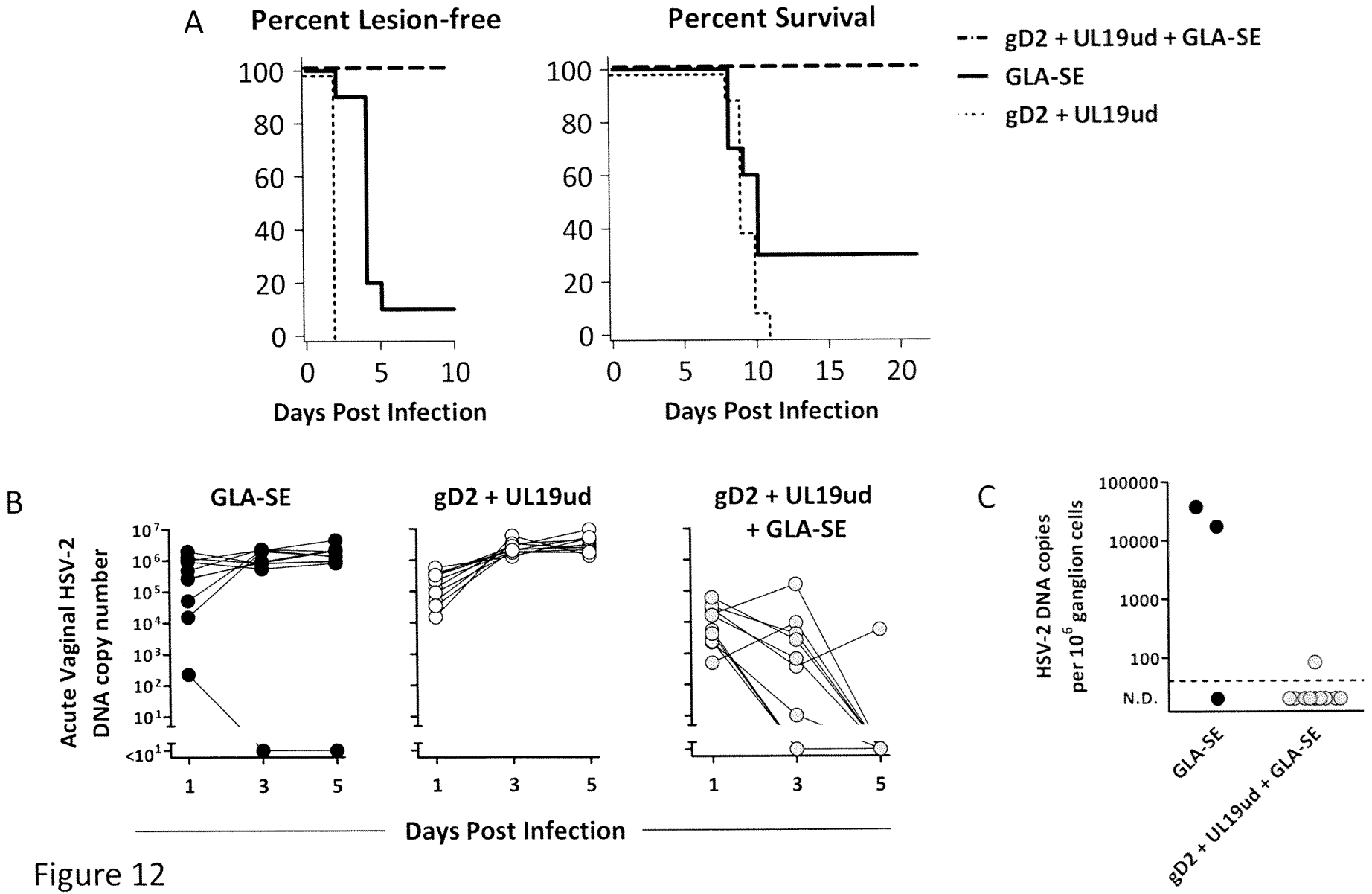

A
Percent Lesion-free
Percent Survival
gD2 + UL19ud + GLA-SE
GLA-SE
gD2 + UL19ud
100
80
60
40
20
0
0
5
10
15
20
Days Post Infection
B
GLA-SE
gD2 + UL19ud
gD2 + UL19ud + GLA-SE
Acute Vaginal HSV-2 DNA copy number
10^7
10^6
10^5
10^4
10^3
10^2
10^1
$<10^1$
1
3
5
Days Post Infection
C
HSV-2 DNA copies per 10^6 ganglion cells
100000
10000
1000
100
N.D.
GLA-SE
gD2 + UL19ud + GLA-SE

Figure 12

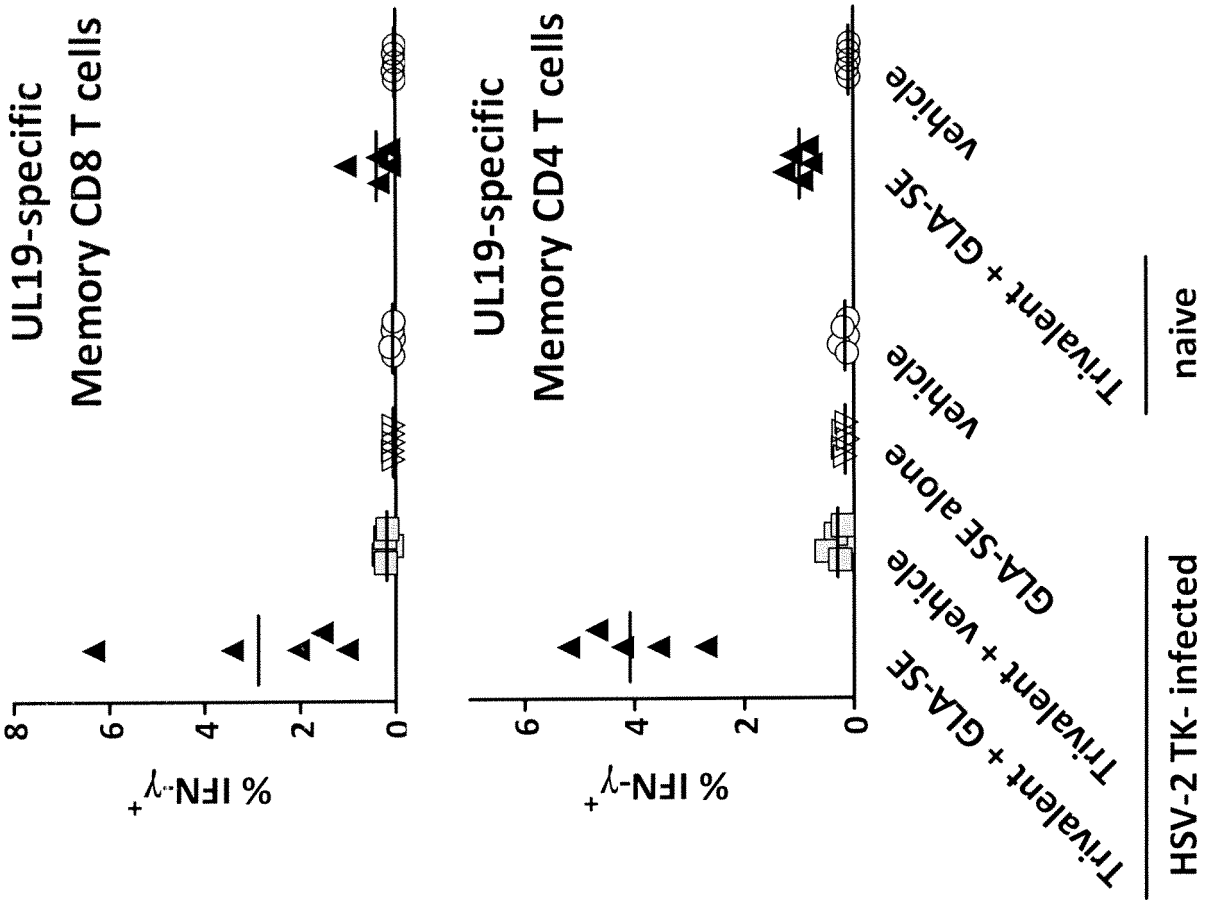

UL19-specific
Memory CD8 T cells
% IFN-γ+
0
2
4
6
8
UL19-specific
Memory CD4 T cells
% IFN-γ+
0
2
4
6
Trivalent + GLA-SE
Trivalent + Vehicle
GLA-SE alone
Vehicle
Trivalent + GLA-SE
Vehicle
HSV-2 TK- infected
naive

Figure 13

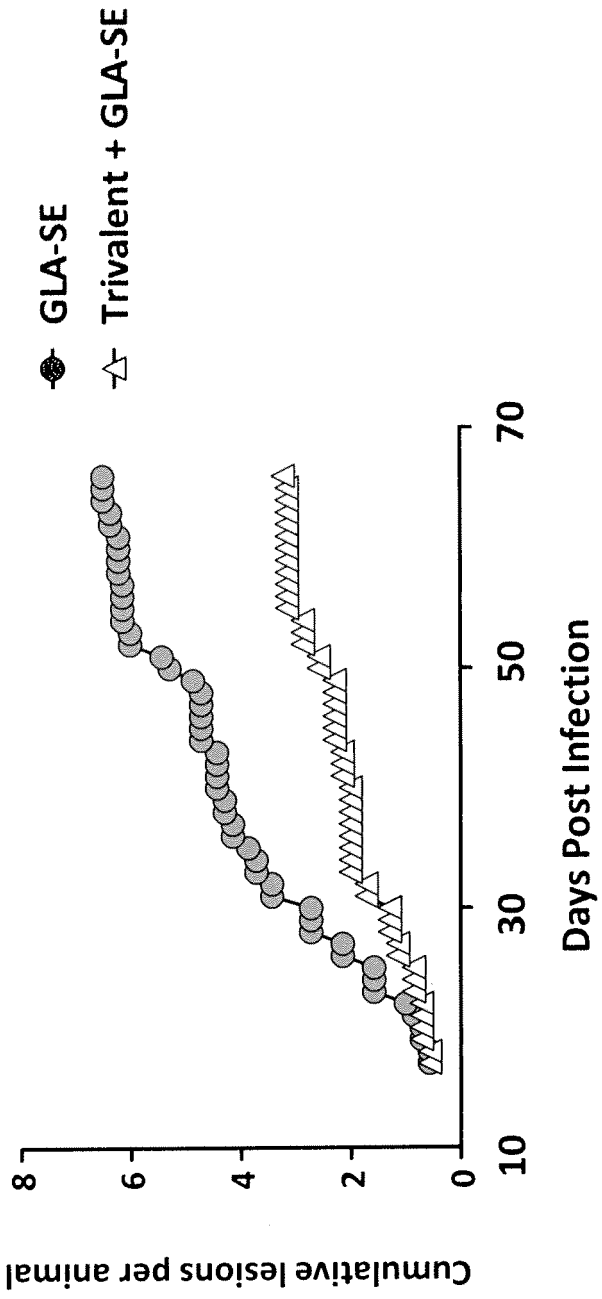

GLA-SE
Trivalent + GLA-SE
Cumulative lesions per animal
0
2
4
6
8
10
30
50
70
Days Post Infection

Figure 14

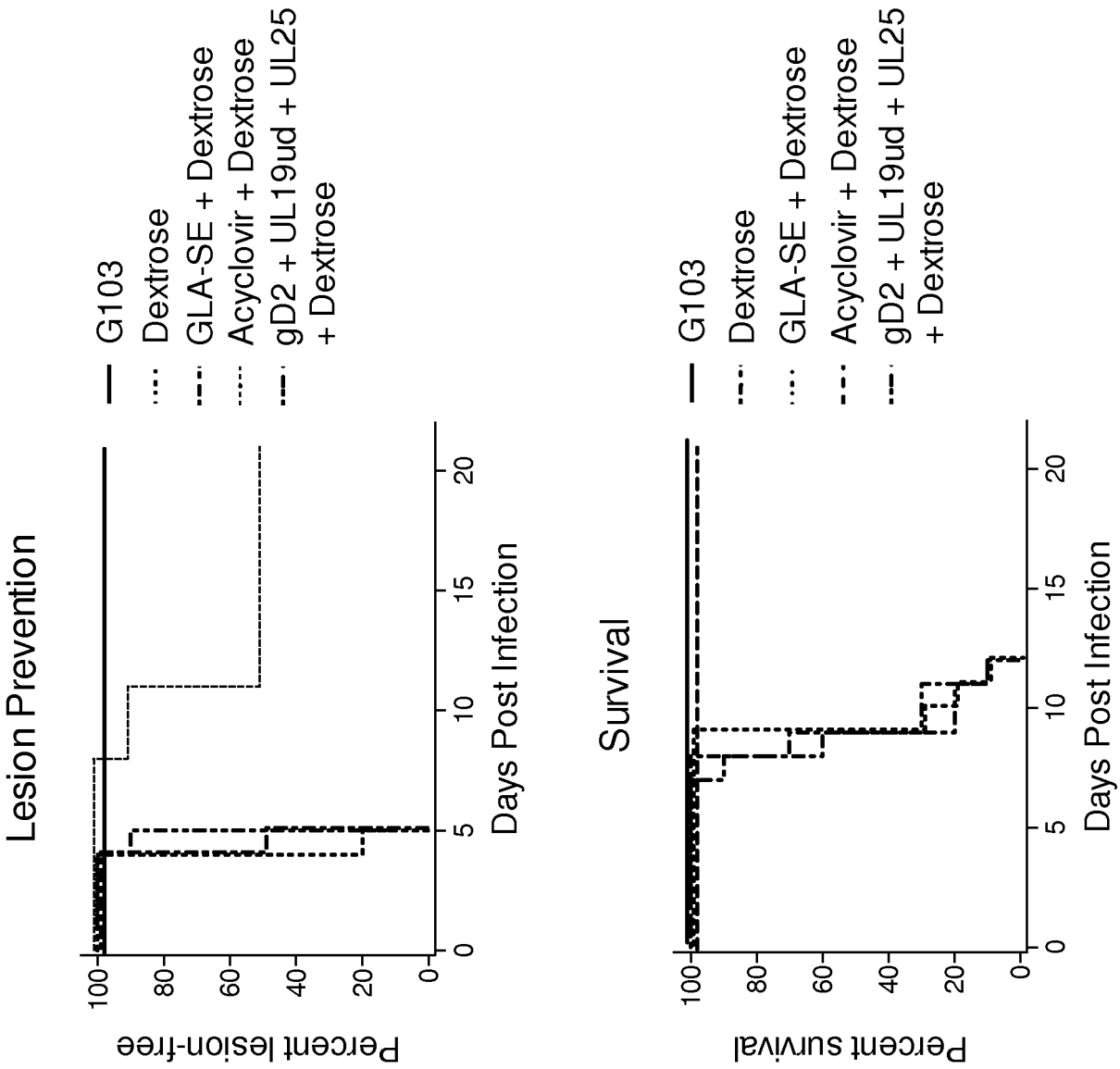

Lesion Prevention
Percent lesion-free
Days Post Infection
G103
Dextrose
GLA-SE + Dextrose
Acyclovir + Dextrose
gD2 + UL19ud + UL25 + Dextrose
A
Survival
Percent survival
Days Post Infection
G103
Dextrose
GLA-SE + Dextrose
Acyclovir + Dextrose
gD2 + UL19ud + UL25 + Dextrose
B

Figure 15

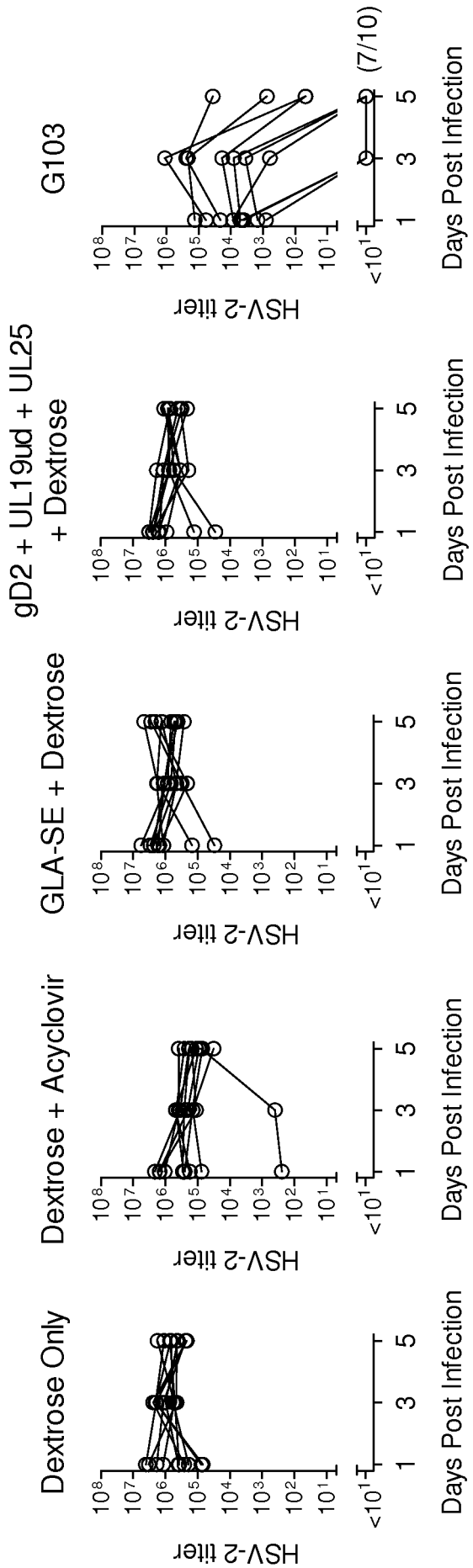

Acute Vaginal Viral Titers
Dextrose Only
Dextrose + Acyclovir
GLA-SE + Dextrose
gD2 + UL19ud + UL25 + Dextrose
G103
HSV-2 titer
Days Post Infection
(7/10)

Figure 16