FIG. 1A

Light chain variable region

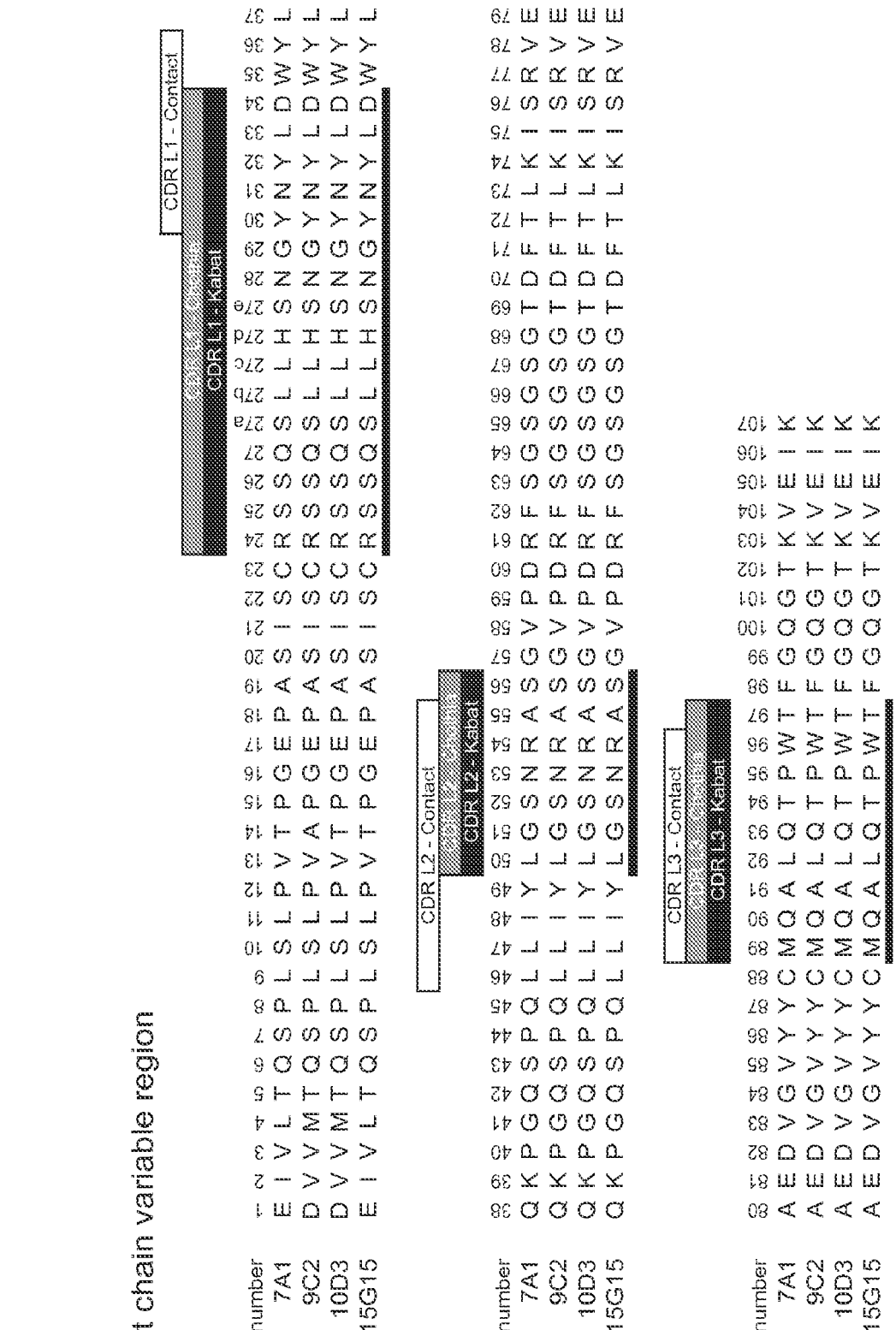
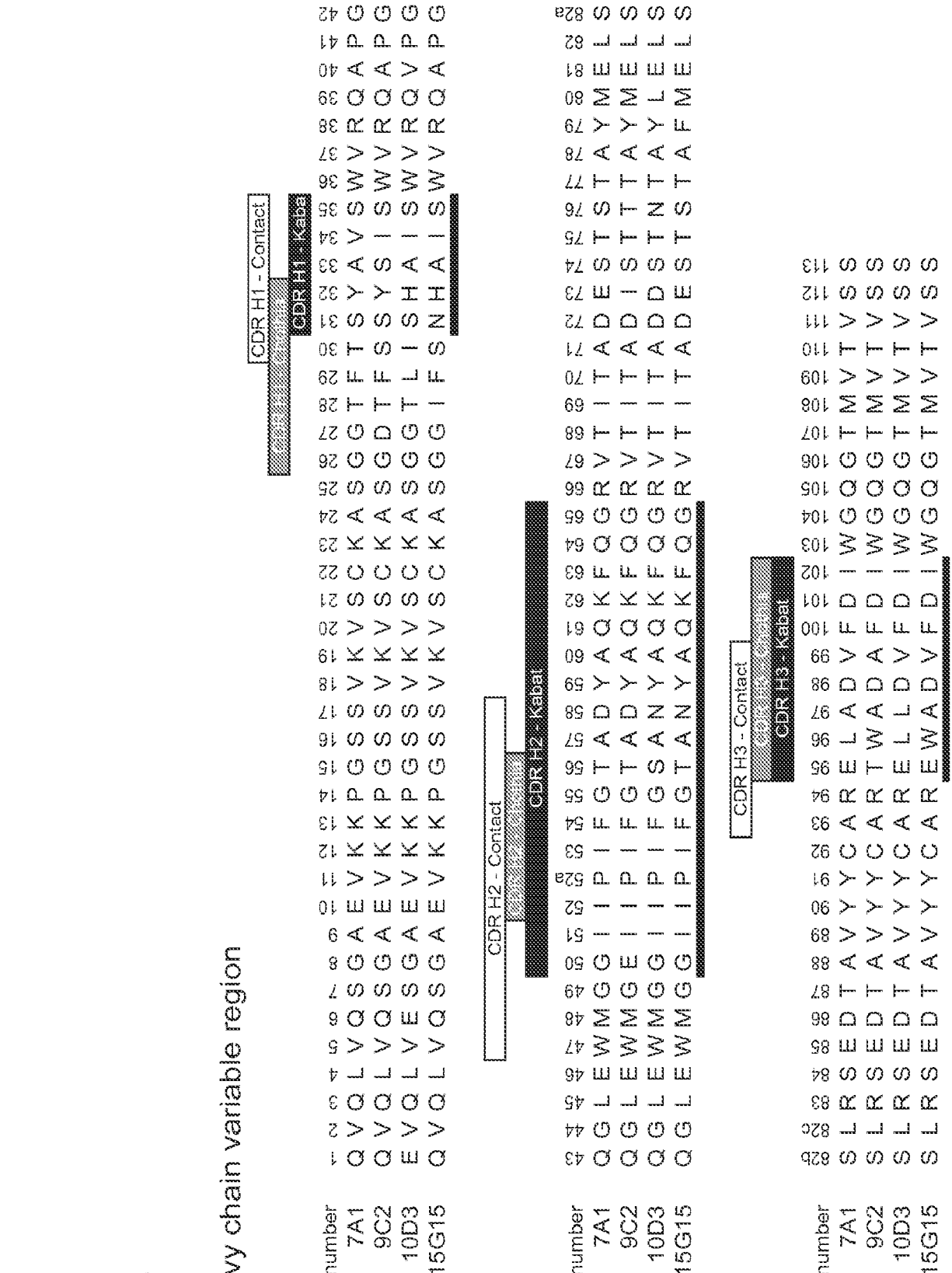


FIG. 1B


Heavy chain variable region
CDR H1 - Contact
CDR H1 - Kabat
CDR H2 - Contact
CDR H2 - Kabat
CDR H3 - Contact
CDR H3 - Kabat
Kabat number
7A1
9C2
10D3
15G15

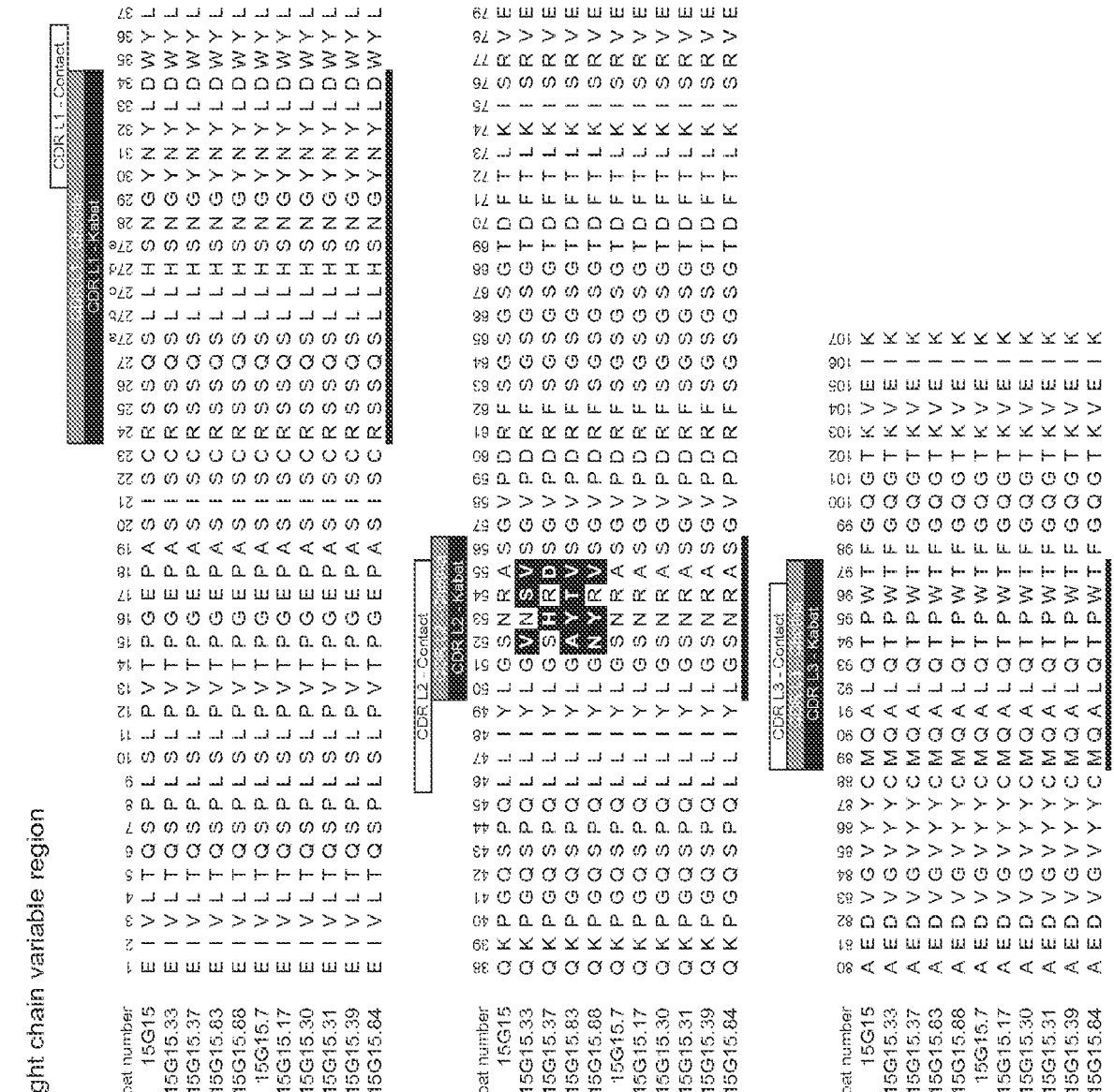

Light chain variable region
CDR L1 - Contact
CDR L1 - Kabat
CDR L2 - Contact
CDR L2 - Kabat
CDR L3 - Contact
CDR L3 - Kabat
Kabat number
15G15
15G15.33
15G15.37
15G15.83
15G15.88
15G15.7
15G15.17
15G15.30
15G15.31
15G15.39
15G15.84

FIG. 2A

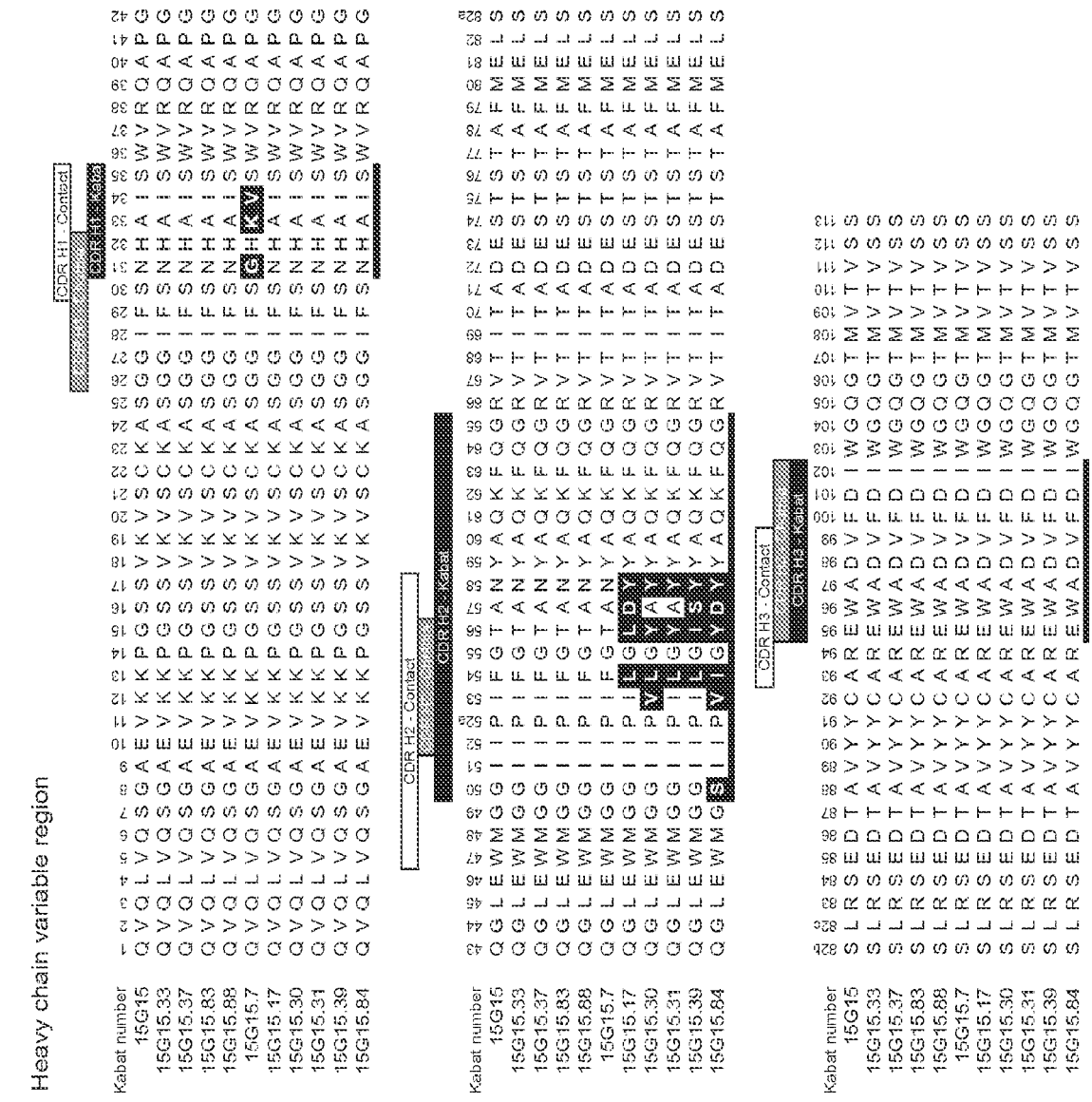

Heavy chain variable region
CDR H1 - Contact
CDR H1 - Kabat
CDR H2 - Contact
CDR H2 - Kabat
CDR H3 - Contact
CDR H3 - Kabat
Kabat number
15G15
15G15.33
15G15.37
15G15.83
15G15.88
15G15.7
15G15.17
15G15.30
15G15.31
15G15.39
15G15.84

FIG. 2B

FIG. 3A

Light chain variable region

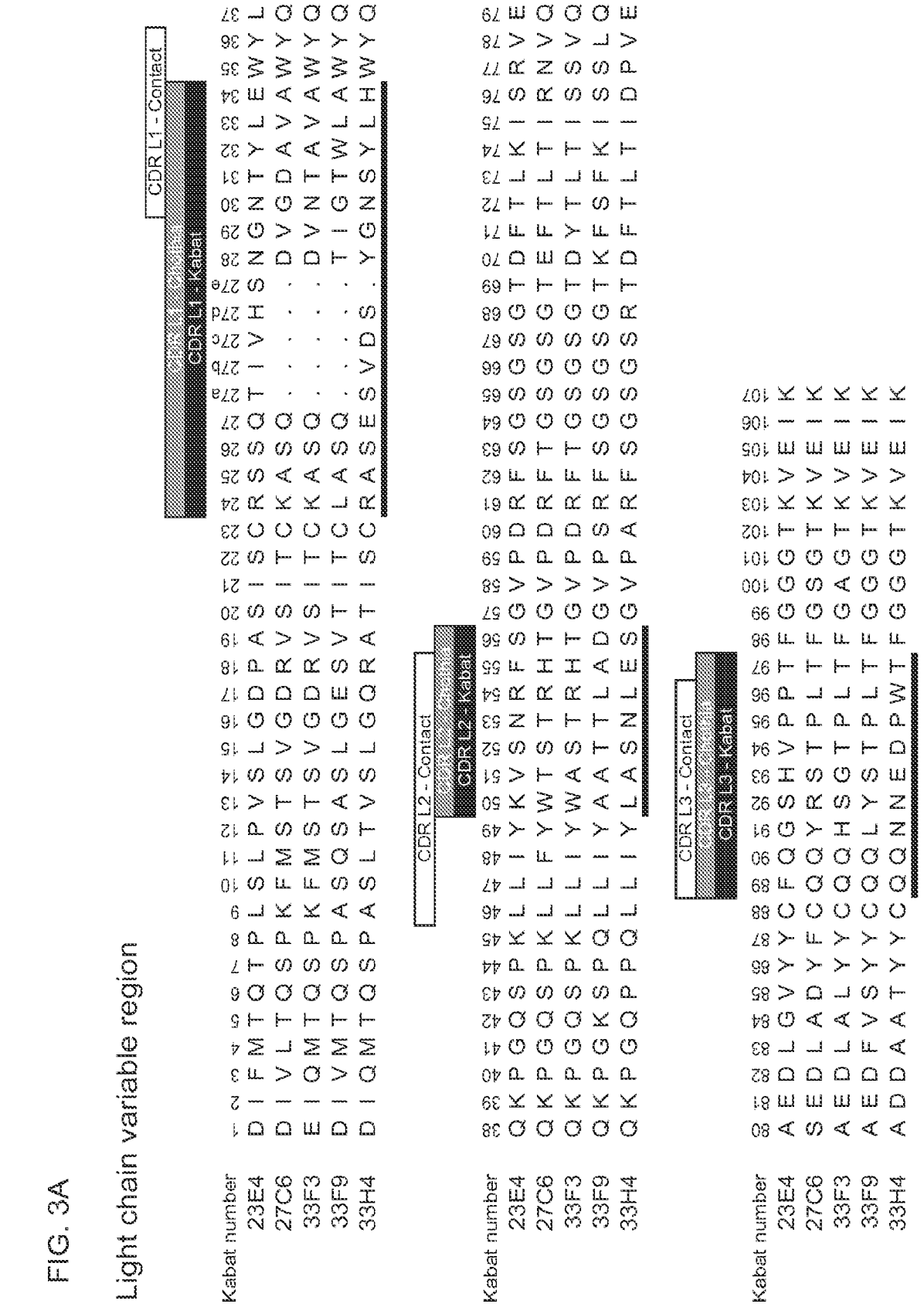


FIG. 3B

Heavy chain variable region

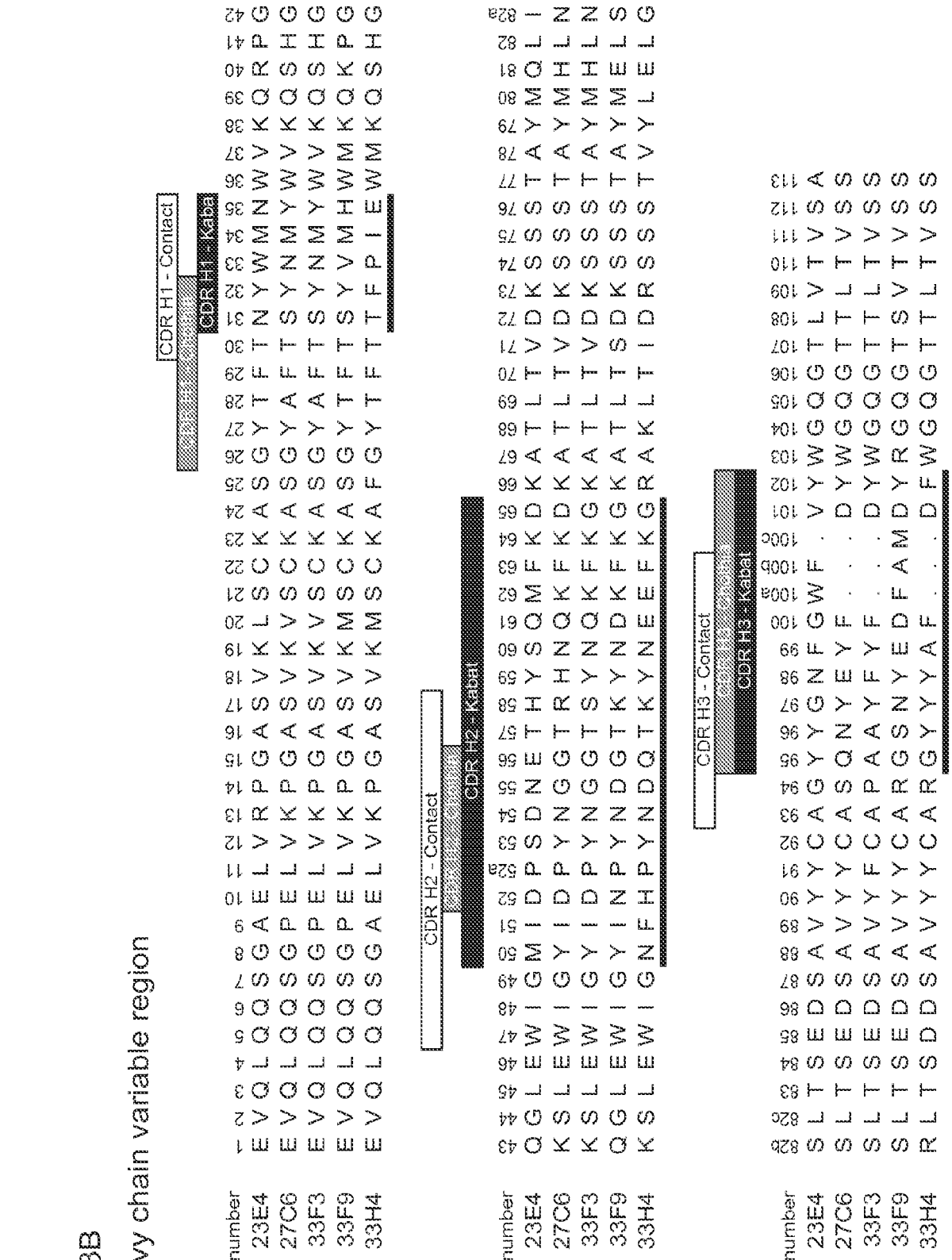


FIG. 4A

Light chain variable region

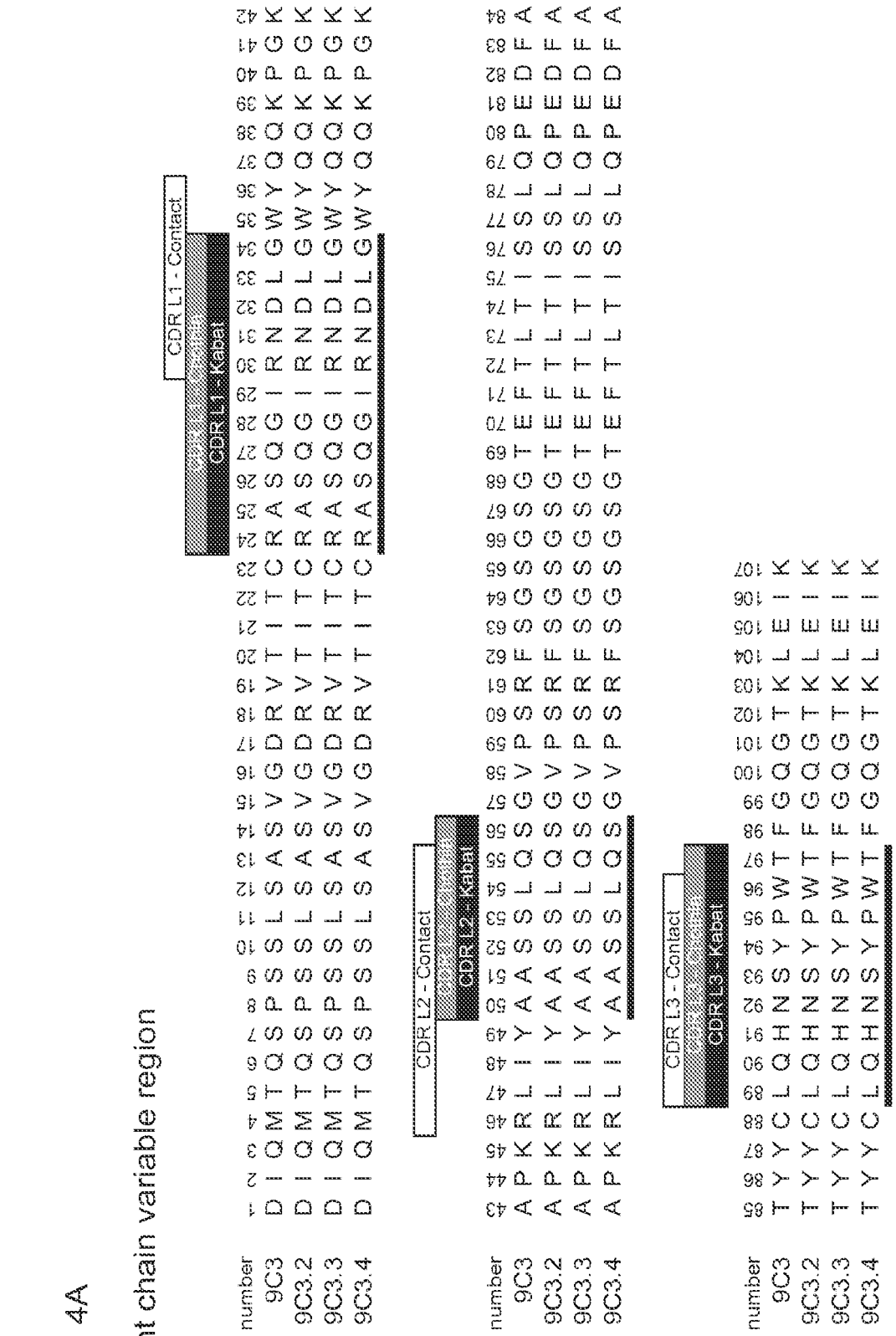


FIG. 4B

Heavy chain variable region

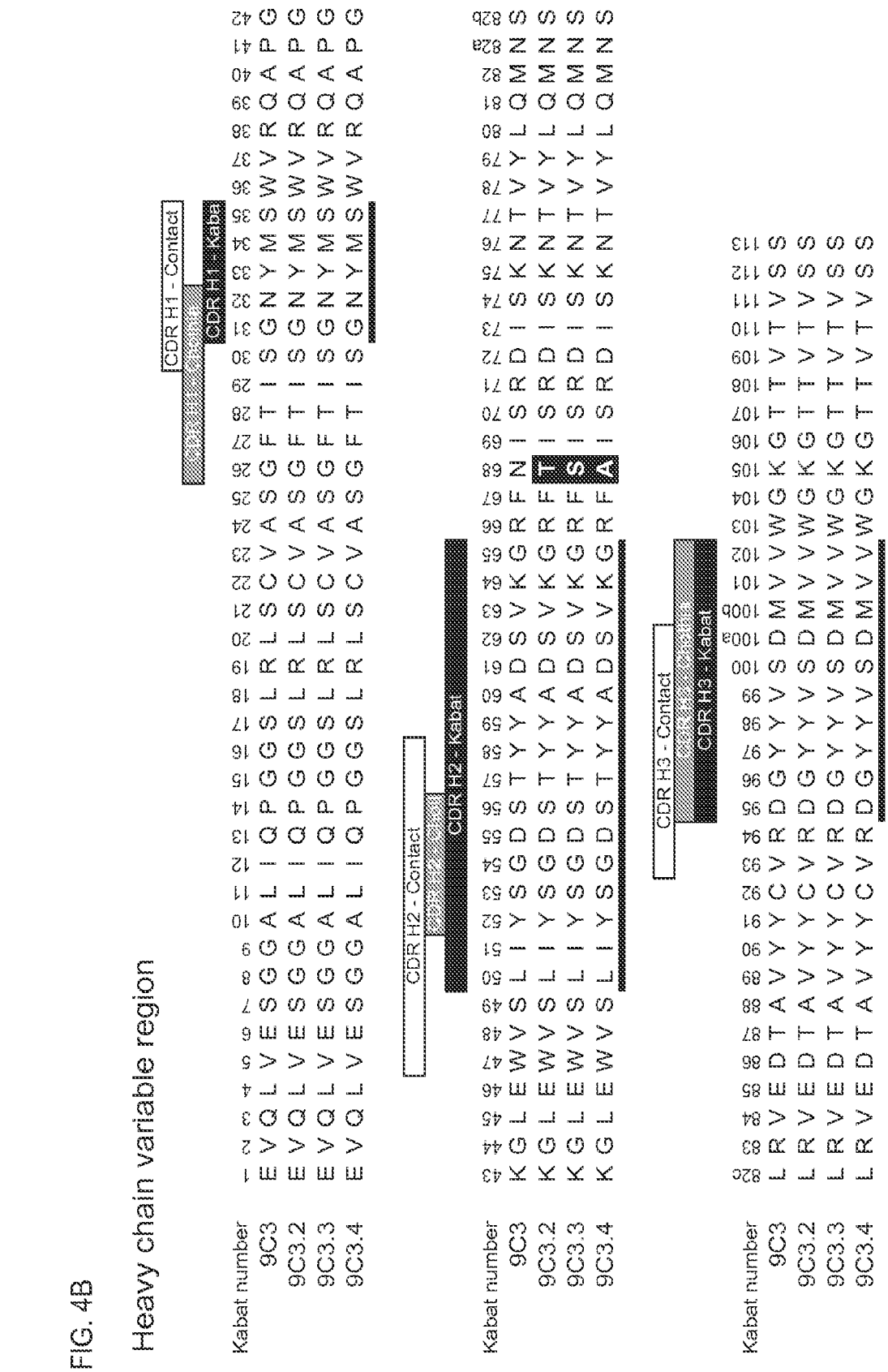


FIG. 5

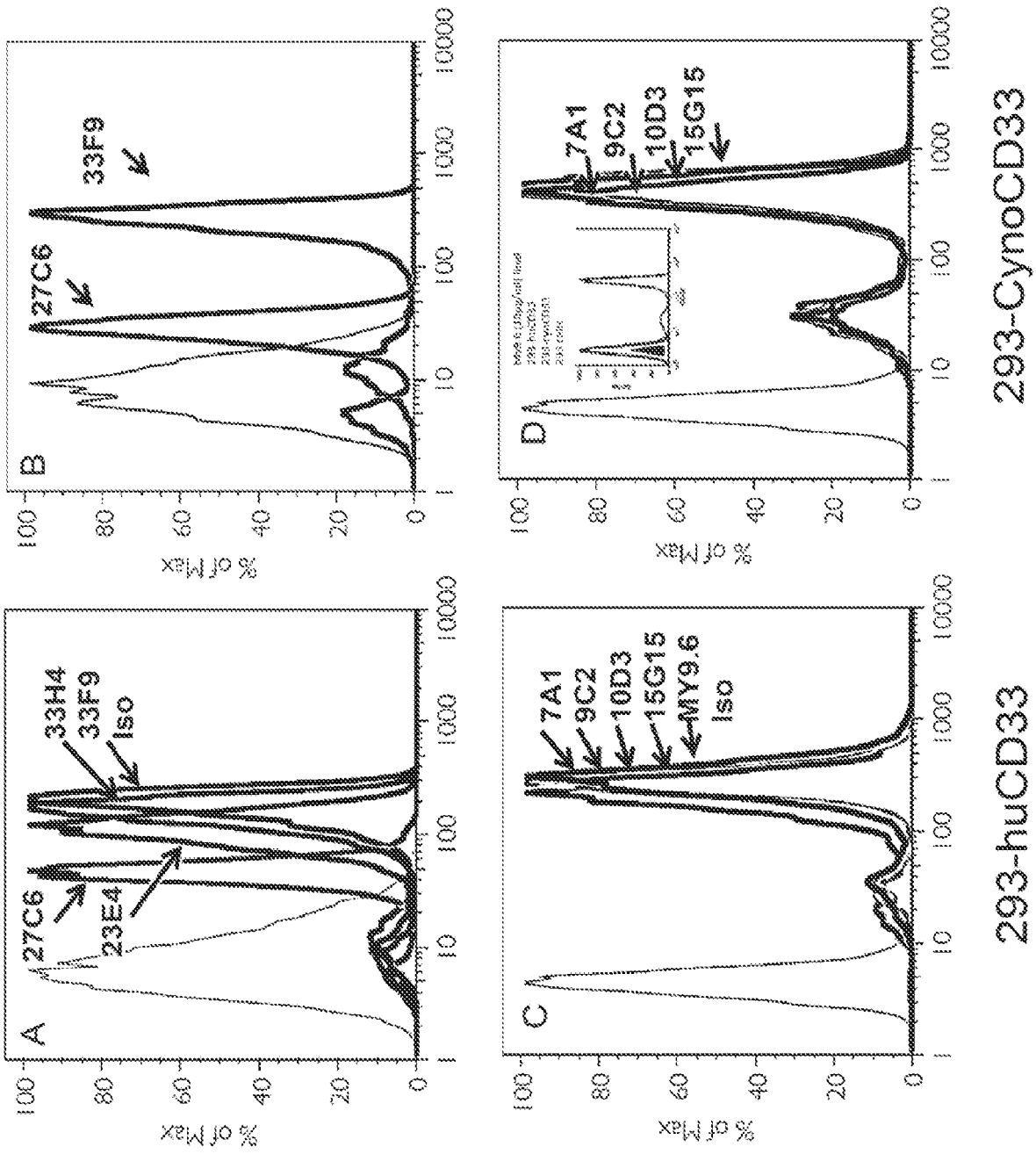

A
B
C
D
27C6
23E4
33H4
33F9
Iso
27C6
33F9
7A1
9C2
10D3
15G15
MY9.6
Iso
% of Max
293-huCD33
293-CynoCD33

FIG. 6

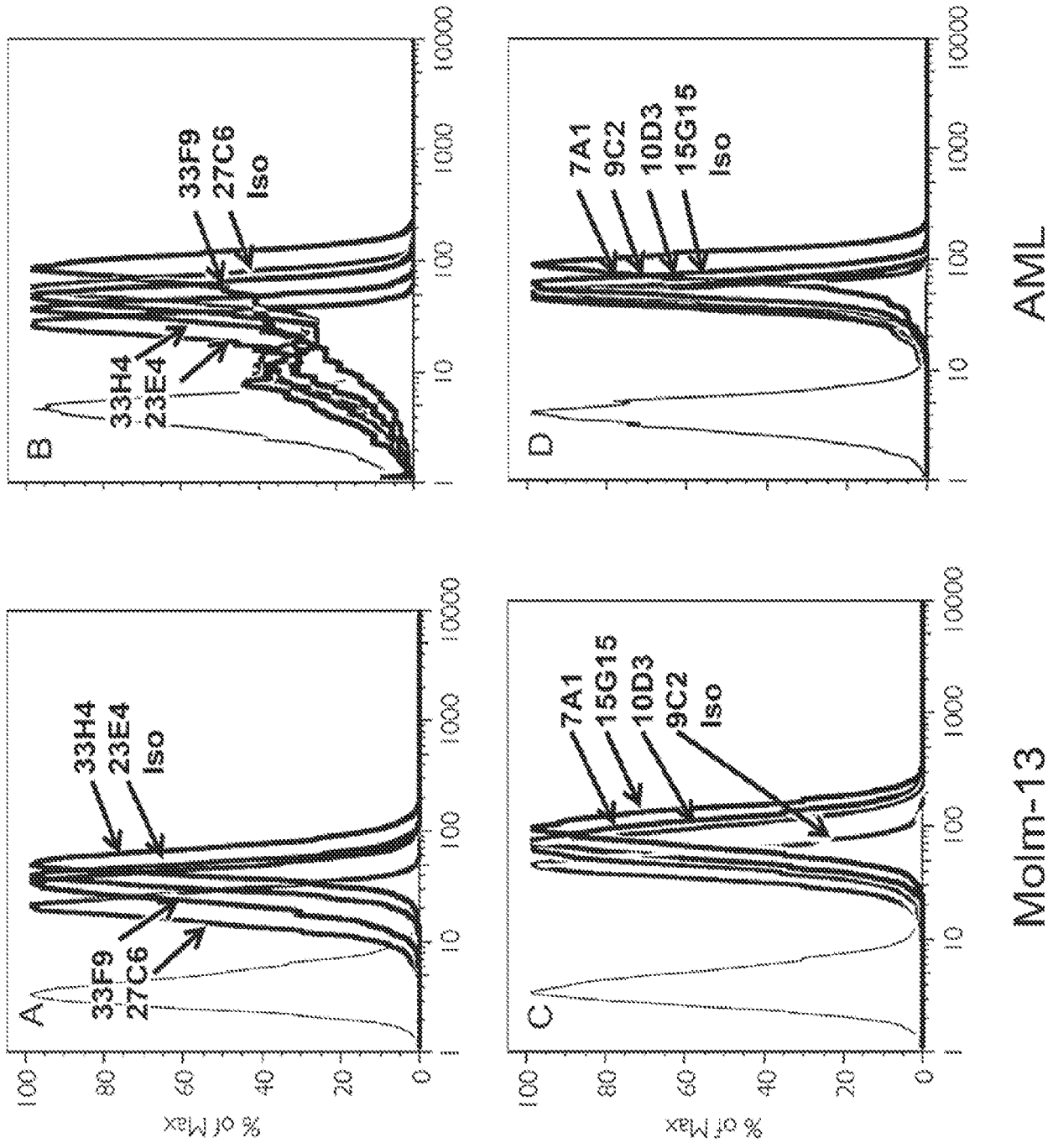

A
33H4
23E4
Iso
33F9
27C6
B
33F9
27C6
Iso
33H4
23E4
C
7A1
15G15
10D3
9C2
Iso
D
7A1
9C2
10D3
15G15
Iso
% of Max
100
80
60
40
20
0
1
10
100
1000
10000
Molm-13
AML

FIG. 7

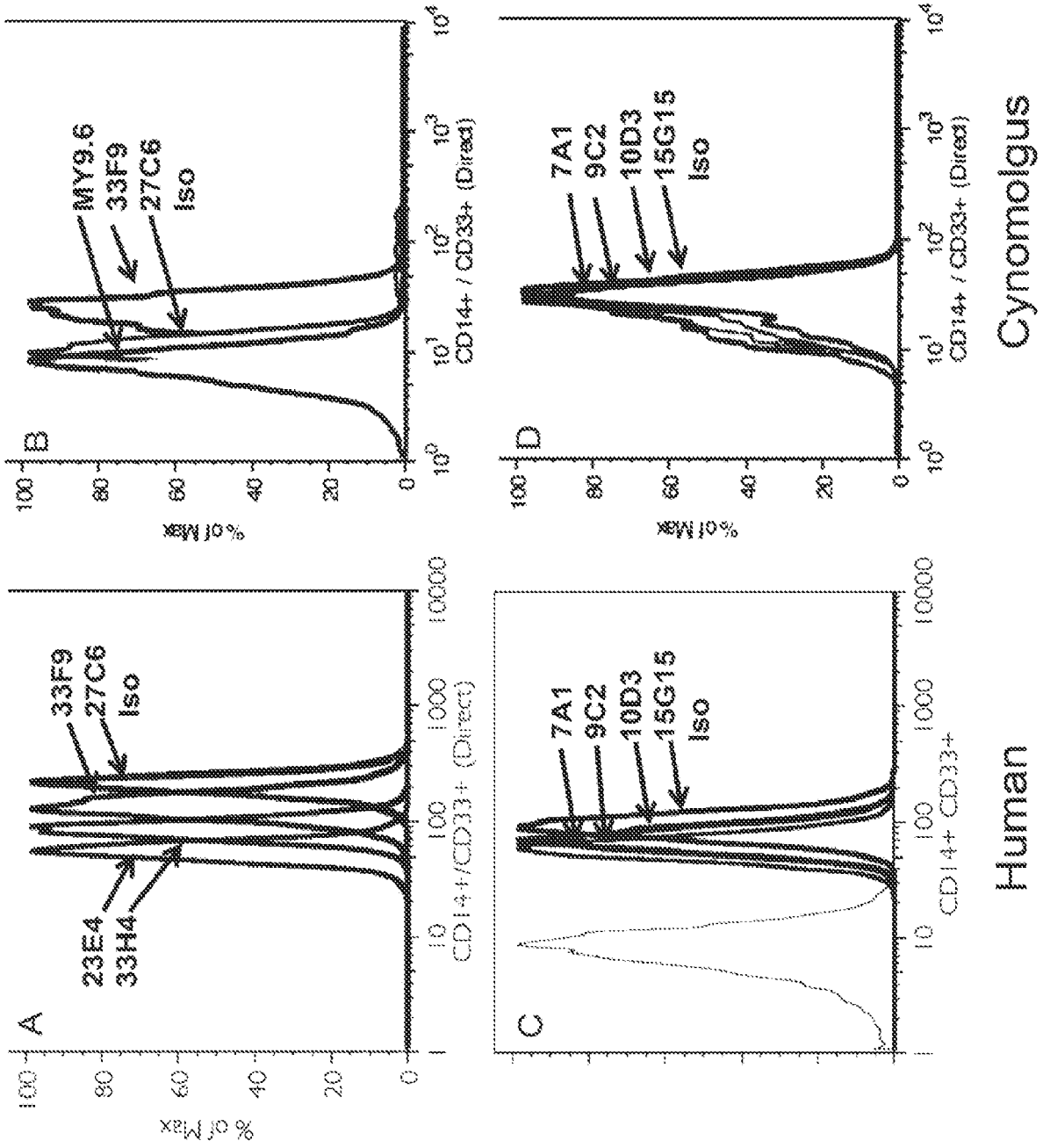
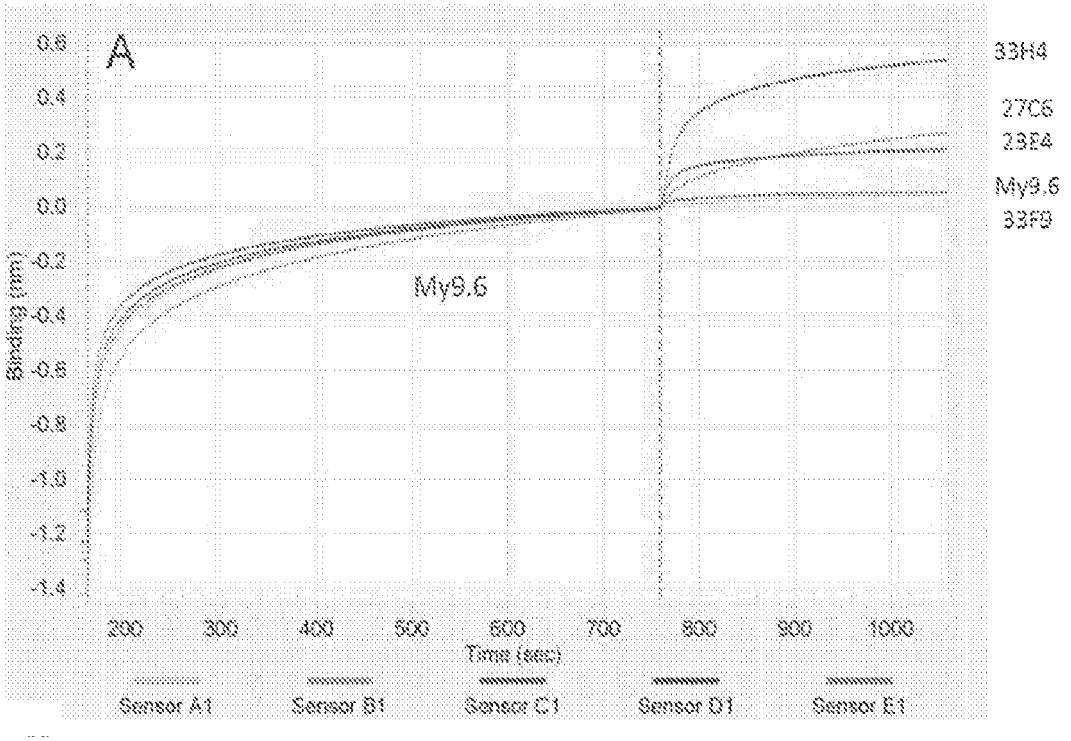

A
B
C
D
% of Max
CD14+/CD33+ (Direct)
CD14+ / CD33+ (Direct)
CD14++ CD33+
33F9
27C6
Iso
23E4
33H4
MY9.6
7A1
9C2
10D3
15G15
Human
Cynomolgus

FIG. 8


A
My9.6
Binding (nm)
Time (sec)
Sensor A1
Sensor B1
Sensor C1
Sensor D1
Sensor E1
33H4
27C6
23E4
My9.6
33F9

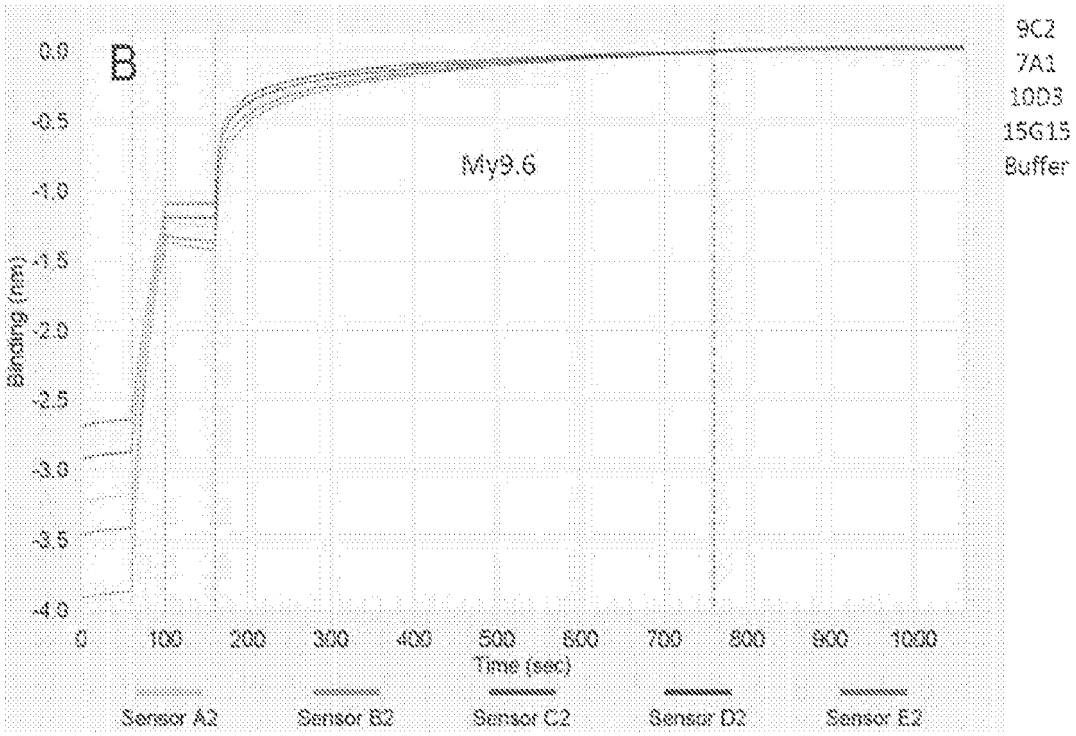

B
My9.6
Binding (nm)
Time (sec)
Sensor A2
Sensor B2
Sensor C2
Sensor D2
Sensor E2
9C2
7A1
10D3
15G15
Buffer

FIG. 8

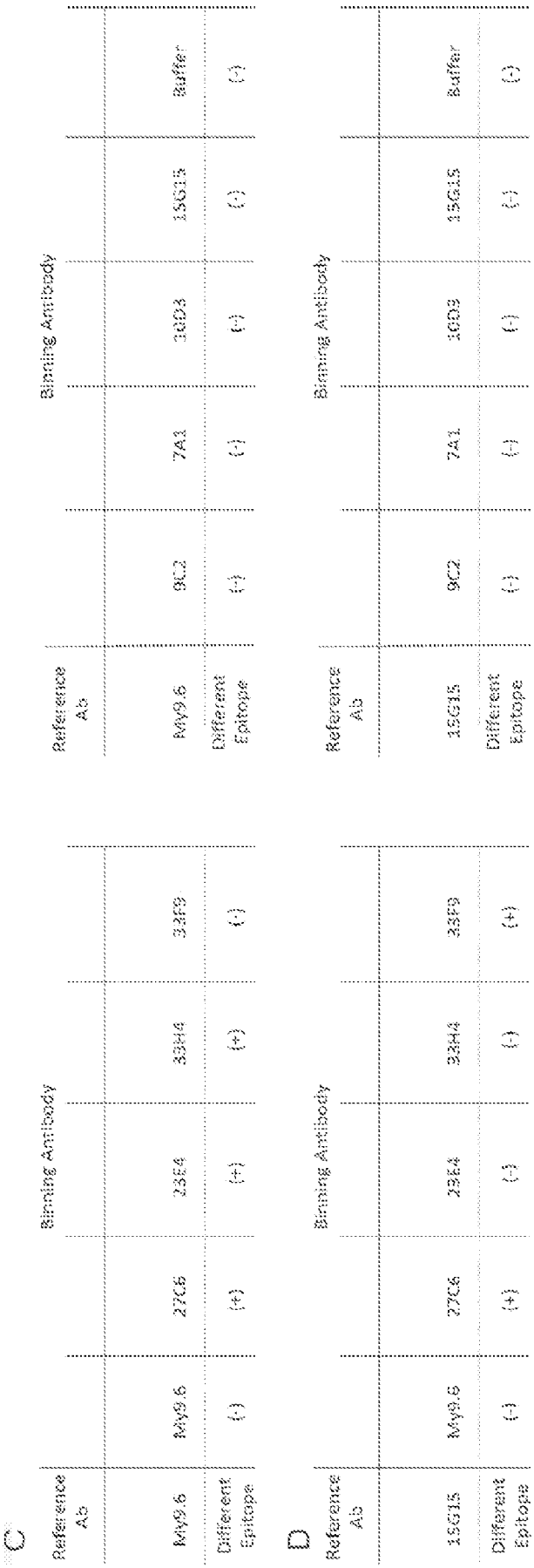

C
Reference Ab
Binning Antibody
My9.6
27C6
23E4
33H4
33F9
My9.6
(-)
(+)
(+)
(+)
(-)
Different Epitope
(-)
(+)
(-)
(-)
(+)
D
Reference Ab
Binning Antibody
15G15
27C6
23E4
33H4
33F9
My9.6
(-)
(+)
(-)
(-)
(+)
Different Epitope
(-)
(+)
(-)
(-)
(+)
Reference Ab
Binning Antibody
My9.6
9C2
7A1
30D3
15G15
Buffer
My9.6
(-)
(-)
(-)
(-)
(-)
Different Epitope
(-)
(-)
(-)
(-)
(-)
Reference Ab
Binning Antibody
15G15
9C2
7A1
30D3
15G15
Buffer
15G15
(-)
(-)
(-)
(-)
(-)
Different Epitope
(-)
(-)
(-)
(-)
(-)

Figure 9

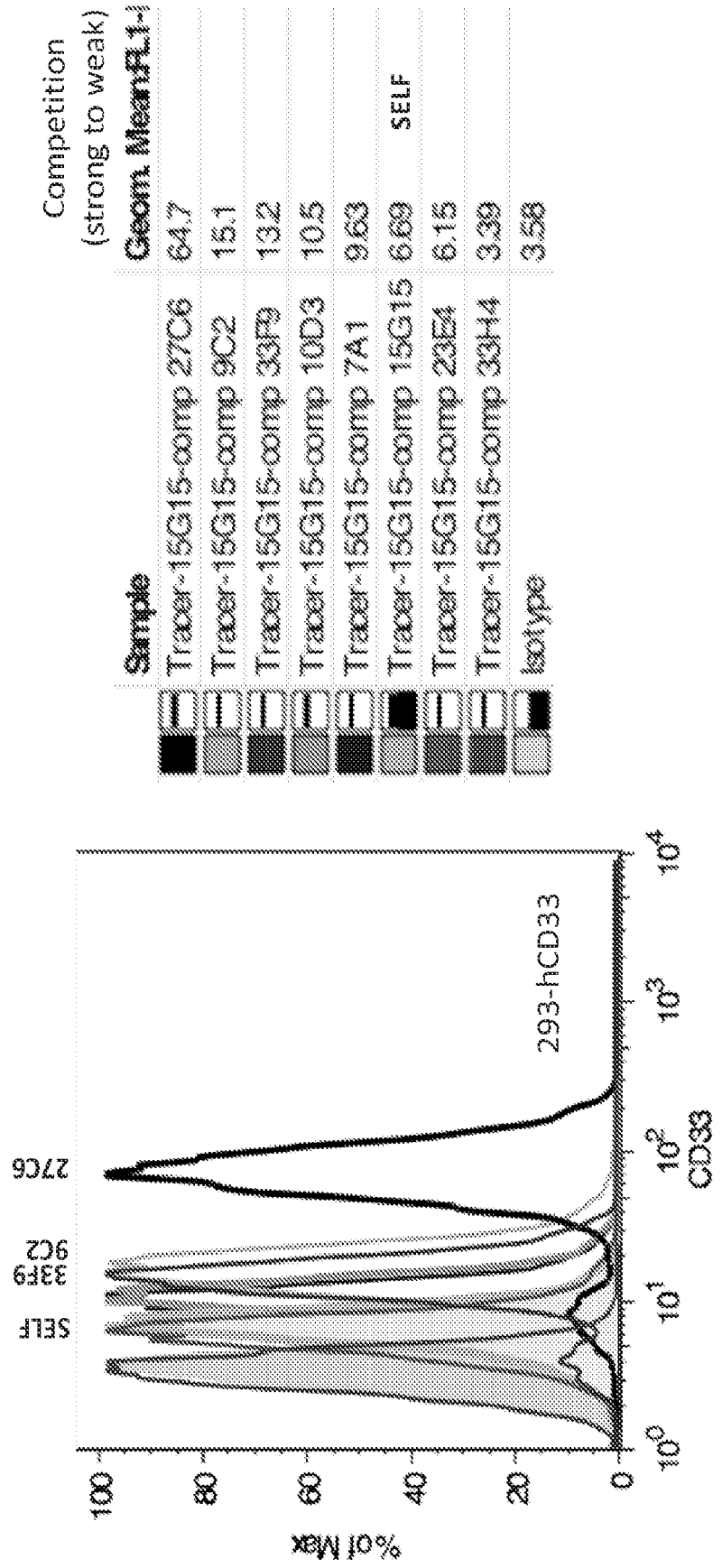

Competition
(strong to weak)
Sample
Geom. Mean FL1-A
Tracer-15G15-comp 27C6 64.7
Tracer-15G15-comp 9C2 15.1
Tracer-15G15-comp 33F9 13.2
Tracer-15G15-comp 10D3 10.5
Tracer-15G15-comp 7A1 9.63
Tracer-15G15-comp 15G15 6.69 SELF
Tracer-15G15-comp 23E4 6.15
Tracer-15G15-comp 33H4 3.39
Isotype 3.58
293-hCD33
SELF
33F9
9C2
27C6
CD33
% of Max
0
20
40
60
80
100
10^0
10^1
10^2
10^3
10^4

Figure 10

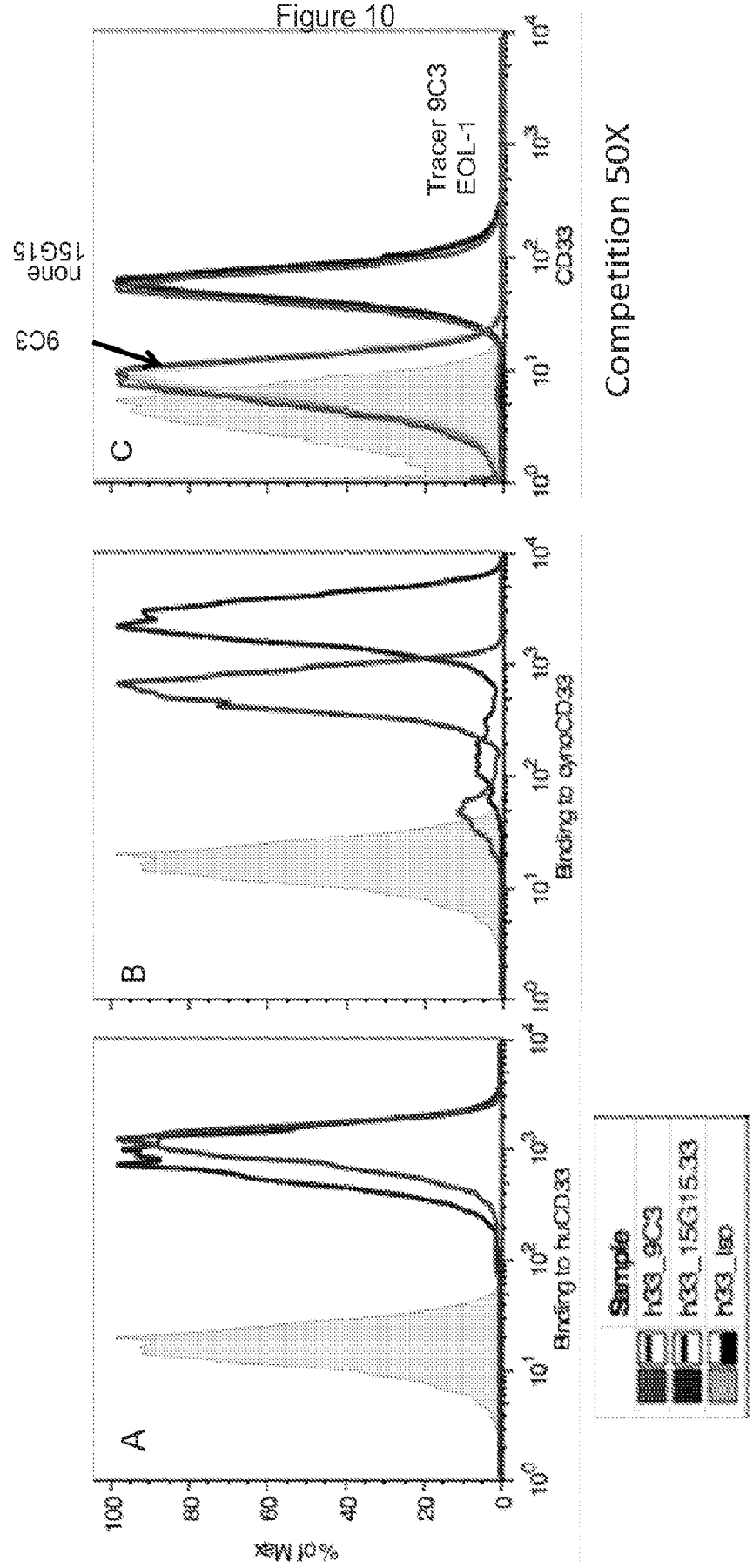

Competition 50X
Tracer 9C3
EOL-1
none
15G15
9C3
C
B
A
CD33
Binding to cynoCD33
Binding to huCD33
%of Max
Sample
h33_9C3
h33_15G15.33
h33_iso

Figure 11

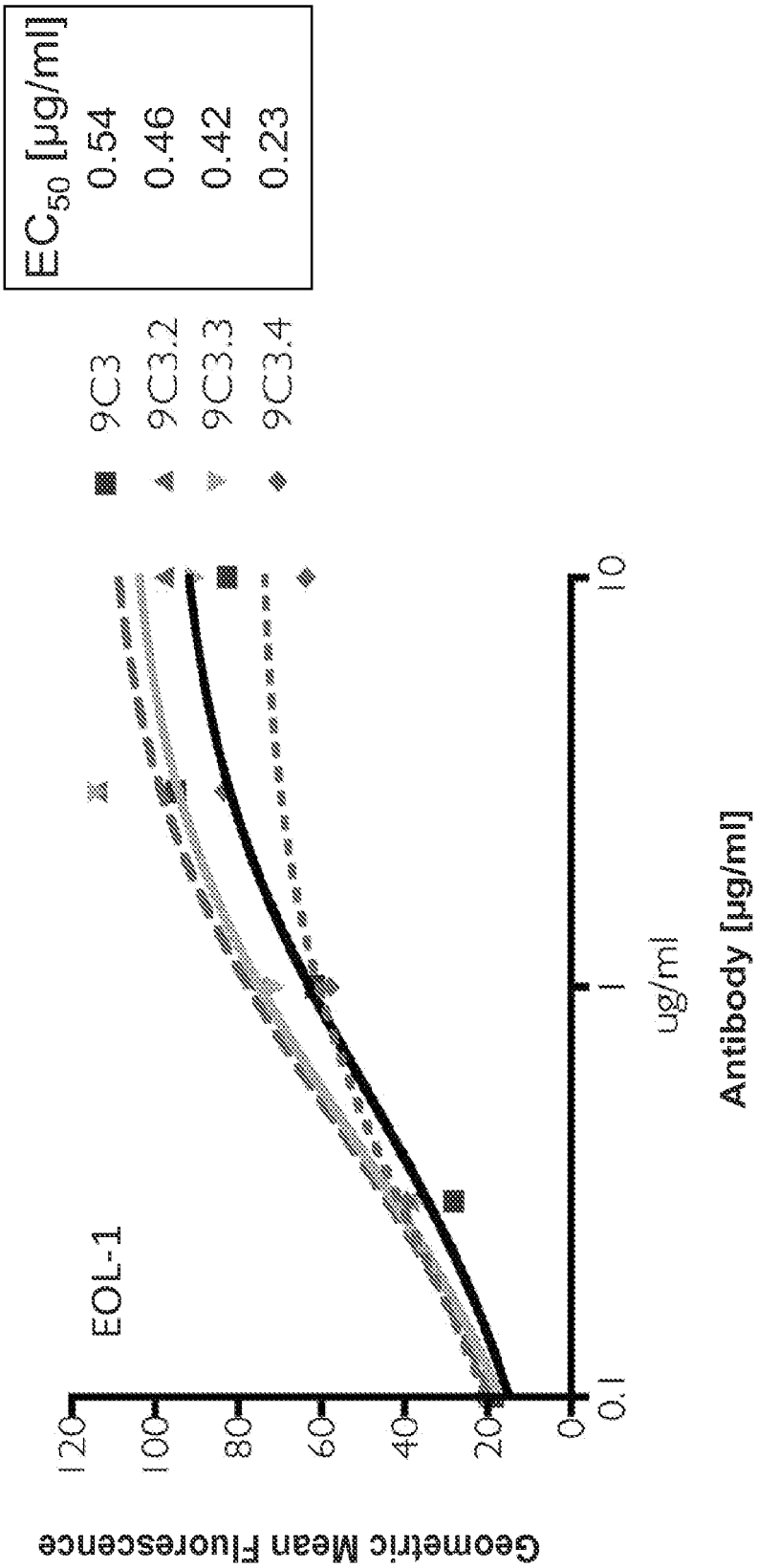

EC50 [µg/ml]
0.54
0.46
0.42
0.23
9C3
9C3.2
9C3.3
9C3.4
EOL-1
Geometric Mean Fluorescence
120
100
80
60
40
20
0
0.1
1
10
ug/ml
Antibody [ug/ml]

Figure 12

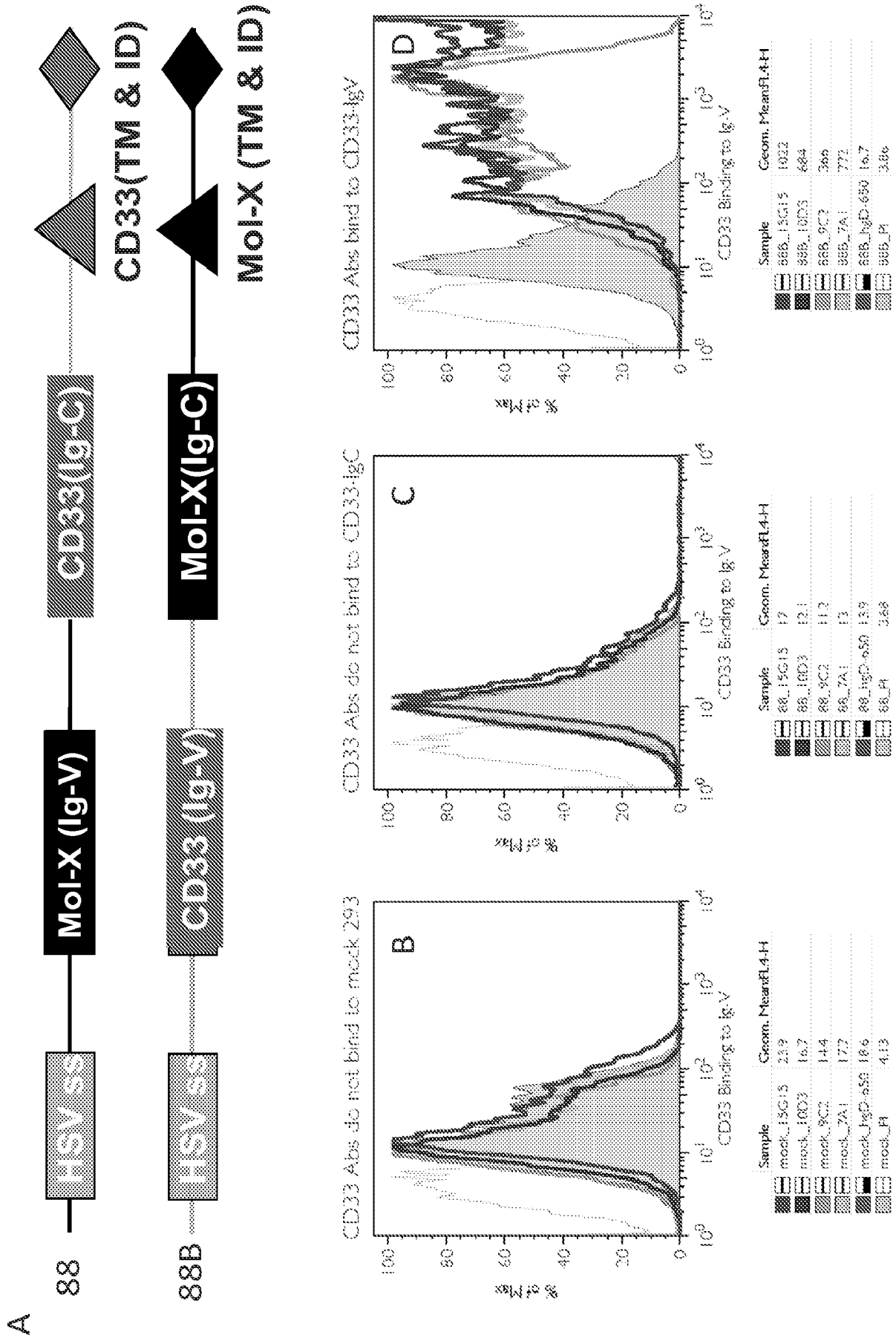
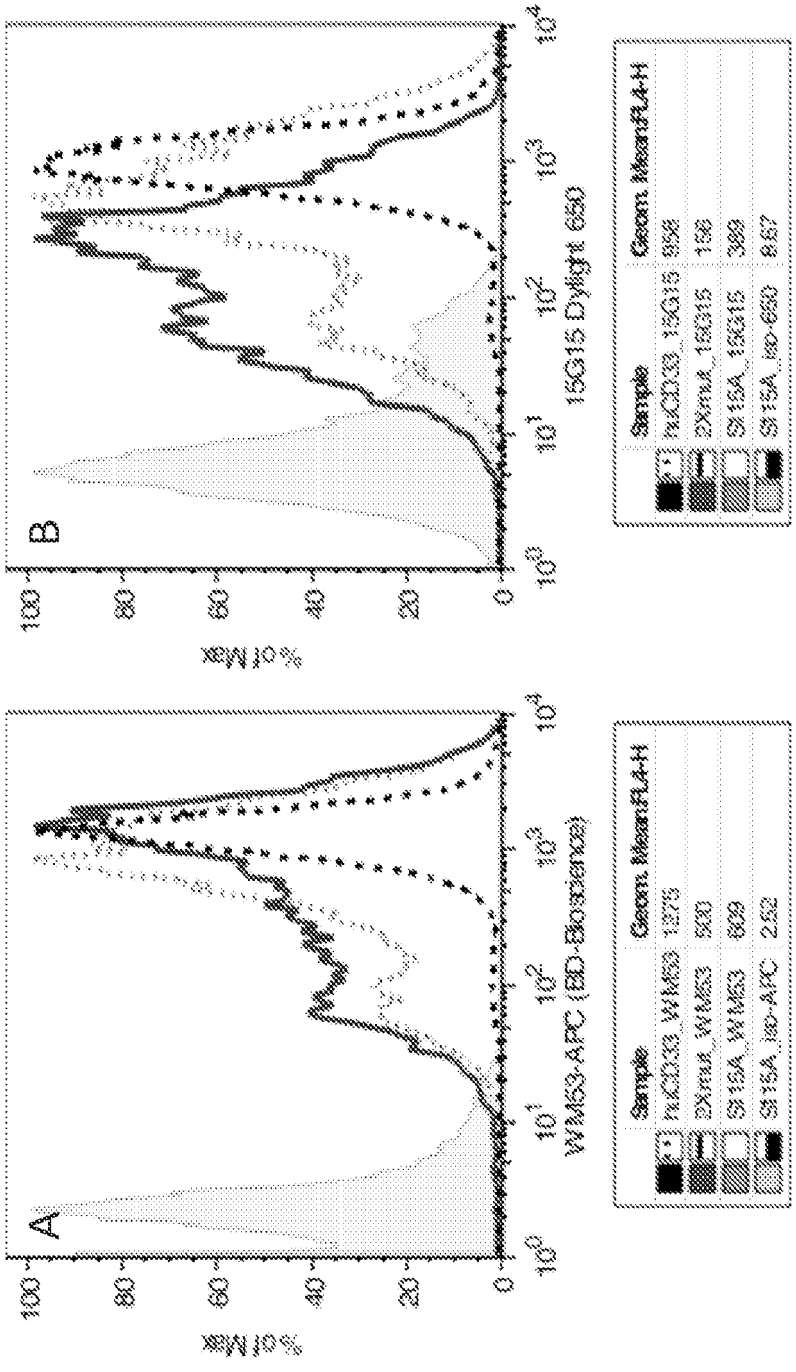

A
88
88B
HgV ss
Mol-X (Ig-V)
CD33(Ig-C)
CD33(TM & ID)
HgV ss
CD33 (Ig-V)
Mol-X(Ig-C)
Mol-X (TM & ID)
B
CD33 Abs do not bind to mock 293
C
CD33 Abs do not bind to CD33-IgC
D
CD33 Abs bind to CD33-IgV
% of Max
CD33 Binding to Ig-V
Sample
Geom. Mean(FL4-H)
mock_15G15 23.9
mock_10D3 16.7
mock_9C2 14.4
mock_7A1 17.2
mock_IgD a50 18.6
mock_PI 4.13
88_15G15 17
88_10D3 12.1
88_9C2 11.2
88_7A1 13
88_IgD a50 13.9
88_PI 3.68
88B_15G15 1022
88B_10D3 684
88B_9C2 366
88B_7A1 772
88B_IgD a50 14.7
88B_PI 3.86

Figure 13


A
B
% of Max
WM63-APC (BD-Bioscience)
15G15 DyLight 650
Sample
Geom. Mean FL4-H
huCD33_15G15 858
2Xmut_15G15 196
S15A_15G15 389
S15A_iso-650 8.67
huCD33_WM63 1273
2Xmut_WM63 620
S15A_WM63 899
S15A_iso-APC 252

C

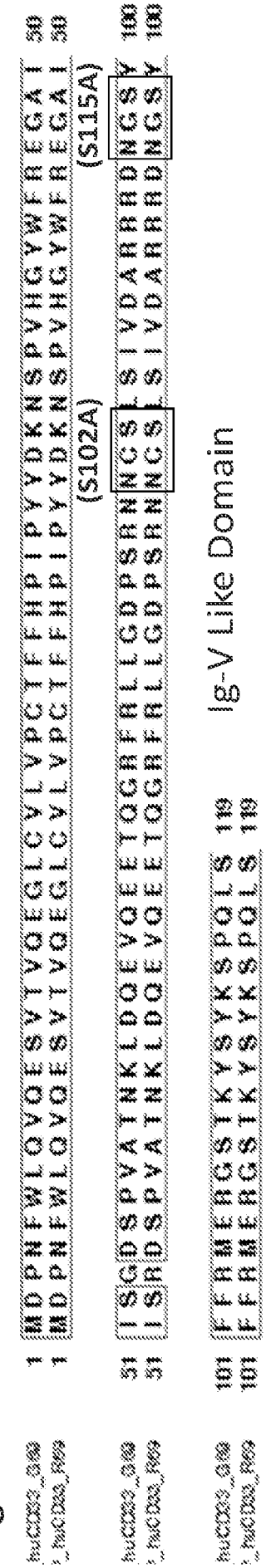

(S102A)
(S115A)
Ig-V Like Domain

Figure 14

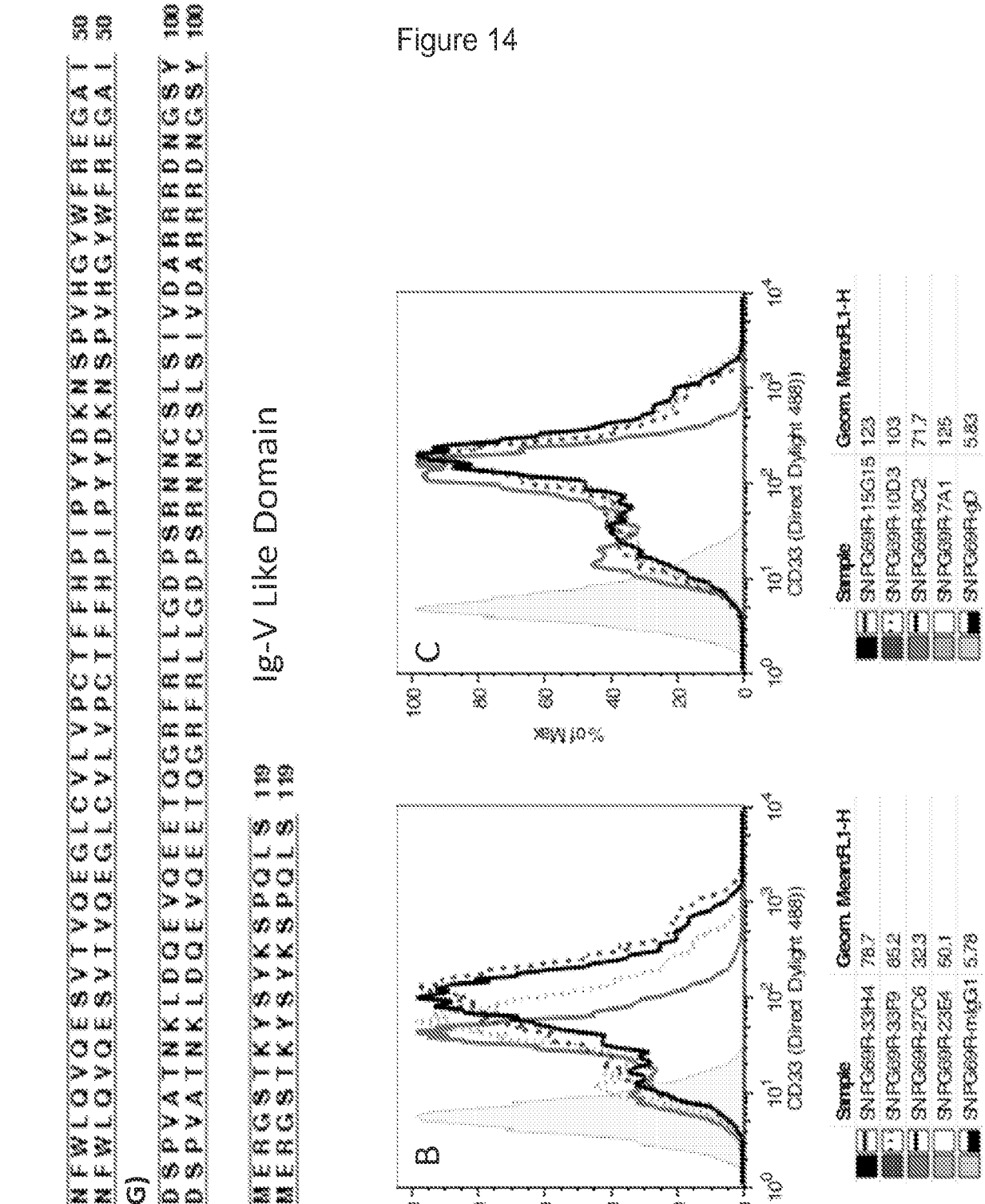
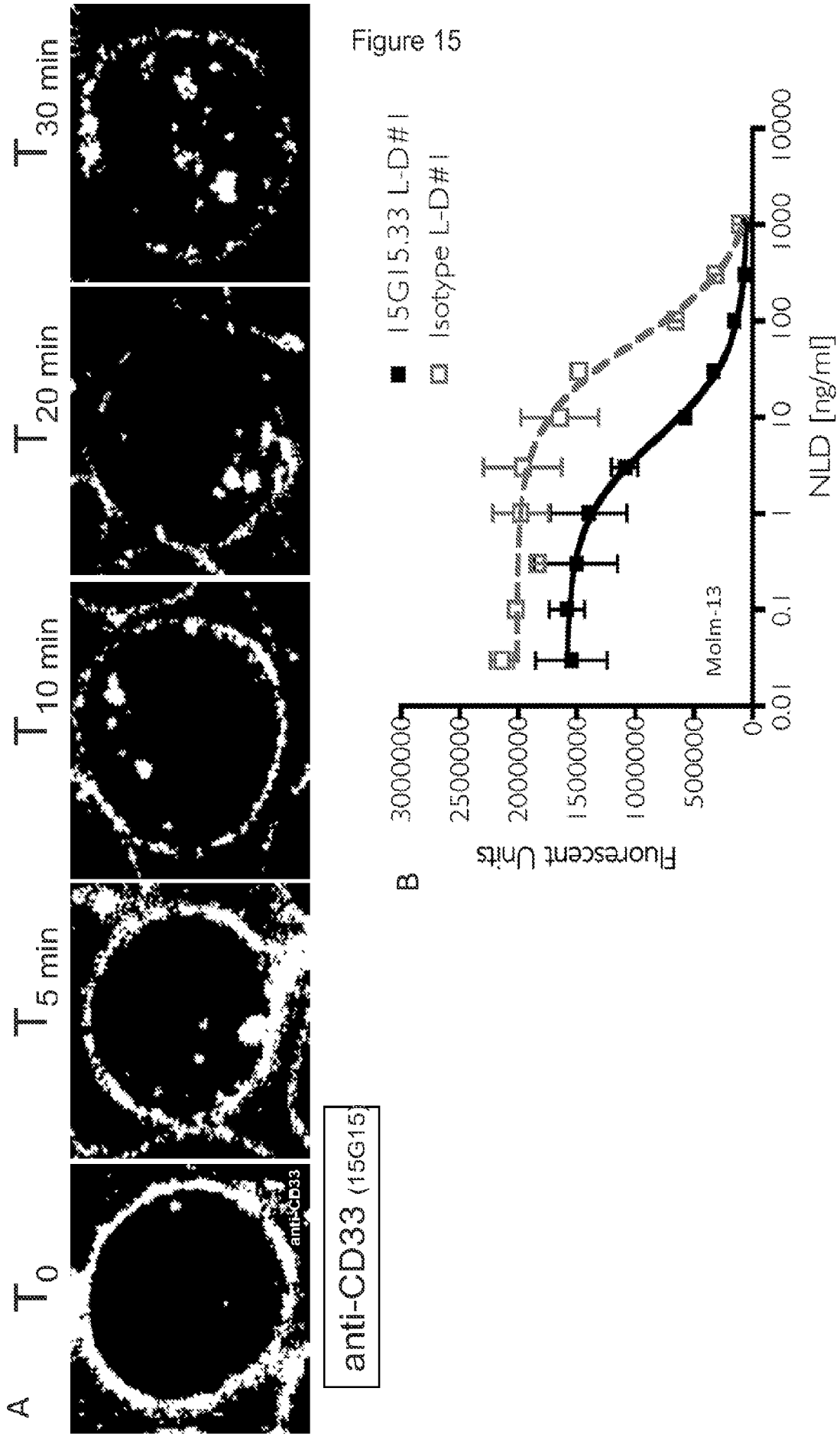

A
huCD33_Gly
2_huCD33_Pro
(R69G)
Ig-V Like Domain
B
C
% of Max
CD33 (Direct Dylight 488)
Sample
Geom. Mean FL1-H
SNPG69R-33H4 78.7
SNPG69R-33F9 85.2
SNPG69R-27C6 32.3
SNPG69R-23E4 50.1
SNPG69R-mIgG1 5.78
SNPG69R-15G15 123
SNPG69R-10D3 103
SNPG69R-9C2 71.7
SNPG69R-7A1 125
SNPG69R-gD 5.83

Figure 15


A
T0
T5 min
T10 min
T20 min
T30 min
anti-CD33
anti-CD33 (15G15)
B
15G15.33 L-D#1
Isotype L-D#1
Molm-13
Fluorescent Units
NLD [ng/ml]
0
500000
1000000
1500000
2000000
2500000
3000000
0.01
0.1
1
10
100
1000
10000

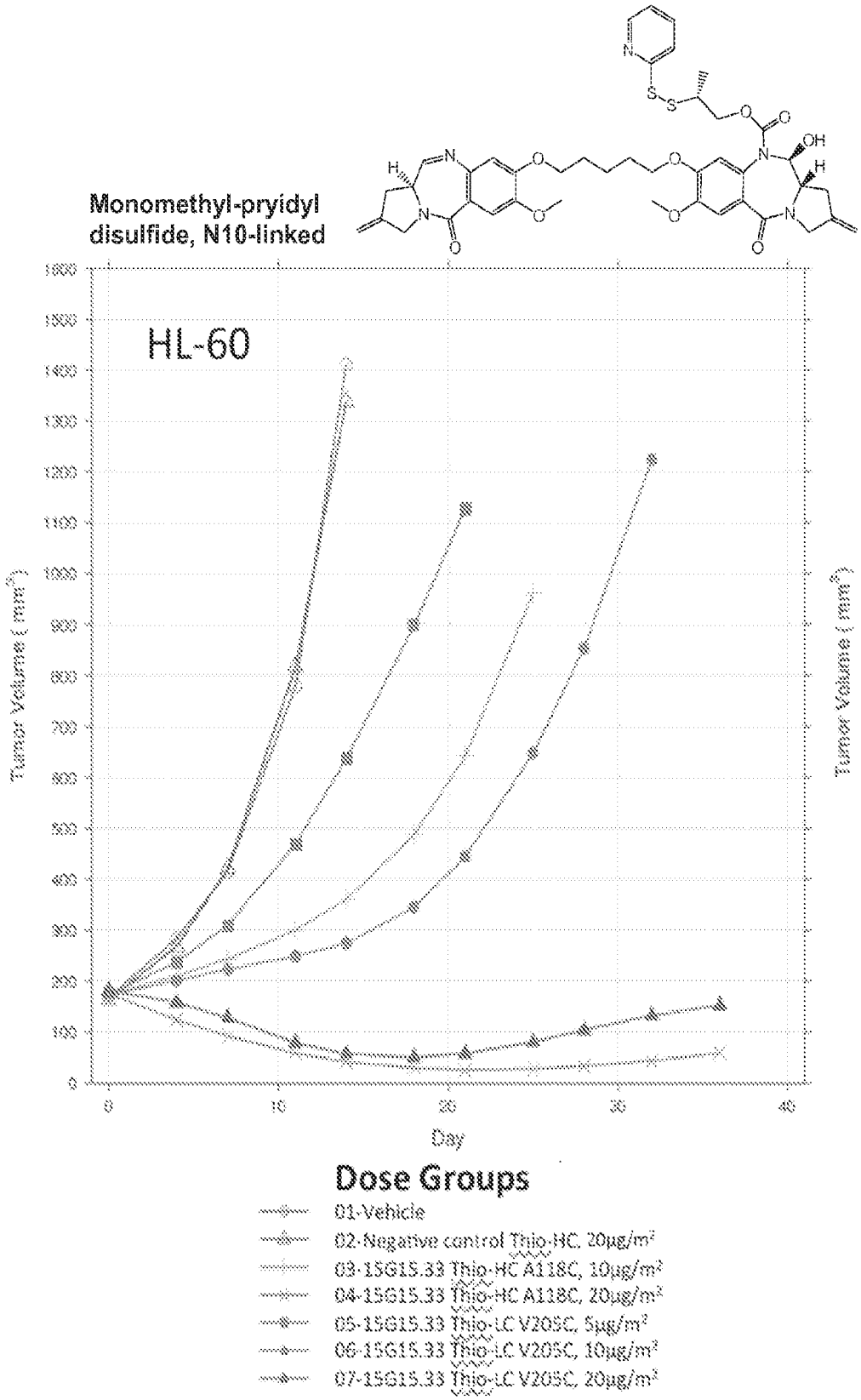

Monomethyl-pryidyl disulfide, N10-linked
HL-60
Tumor Volume (mm3)
Day
Dose Groups
01-Vehicle
02-Negative control Thio-HC, 20µg/m²
03-15G15.33 Thio-HC A118C, 10µg/m²
04-15G15.33 Thio-HC A118C, 20µg/m²
05-15G15.33 Thio-LC V205C, 5µg/m²
06-15G15.33 Thio-LC V205C, 10µg/m²
07-15G15.33 Thio-LC V205C, 20µg/m²

FIG. 16A

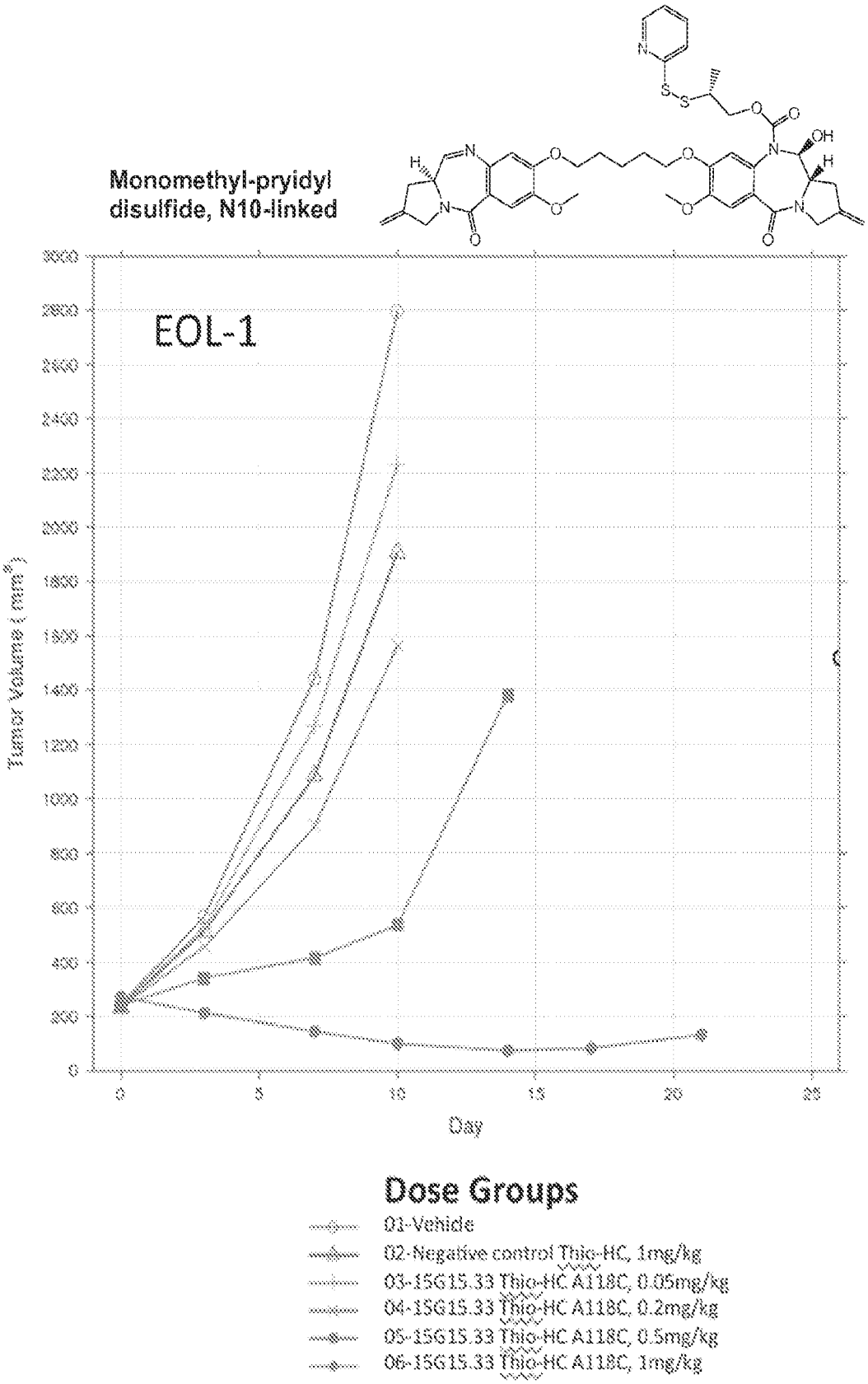
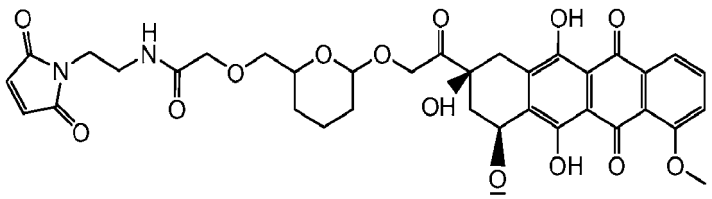

Monomethyl-pryidyl disulfide, N10-linked
EOL-1
Tumor Volume (mm³)
Day
Dose Groups
01-Vehicle
02-Negative control Thio-HC, 1mg/kg
03-15G15.33 Thio-HC A118C, 0.05mg/kg
04-15G15.33 Thio-HC A118C, 0.2mg/kg
05-15G15.33 Thio-HC A118C, 0.5mg/kg
06-15G15.33 Thio-HC A118C, 1mg/kg

FIG. 16B



Maleimide with acetal linker-PNU

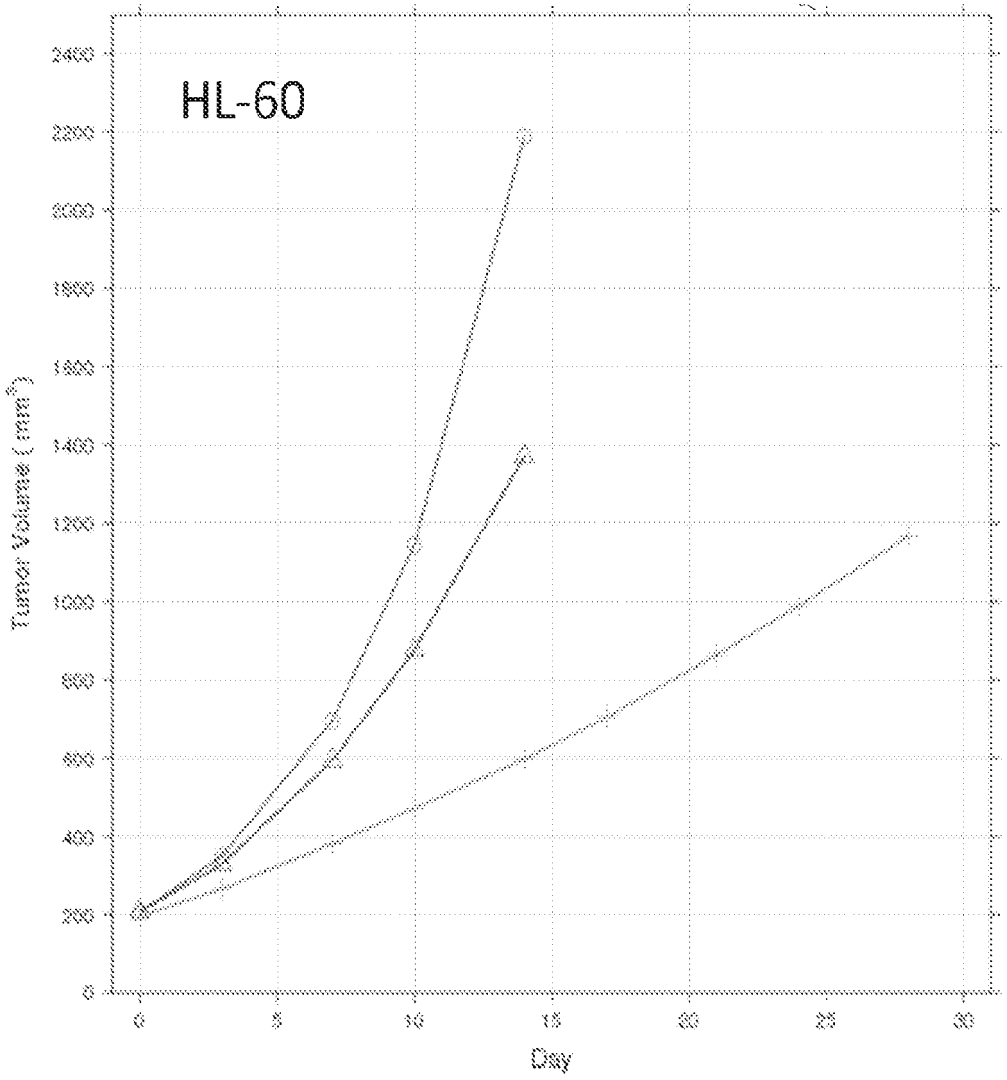


FIG. 17