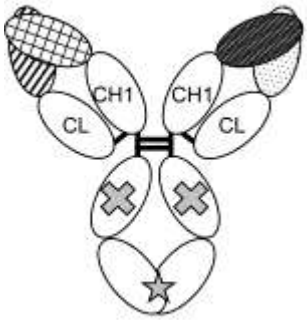
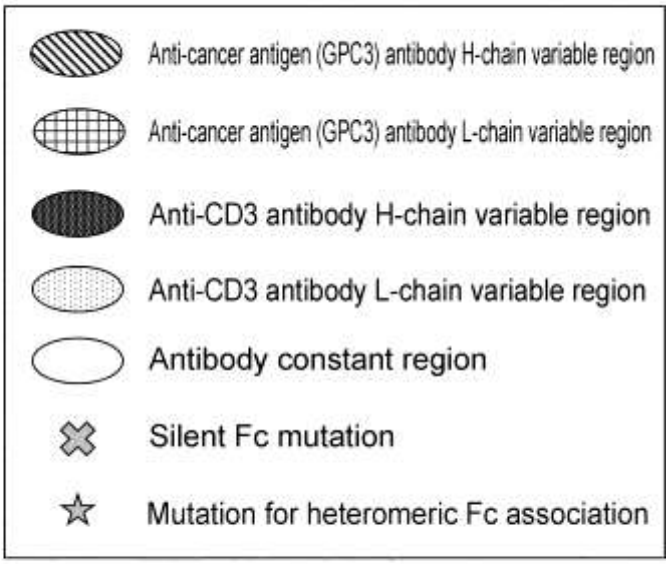
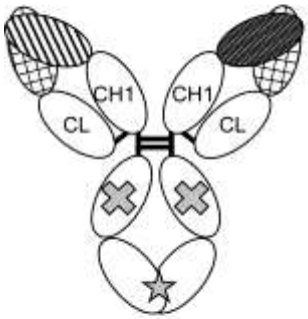
a ERY22





b ERY27



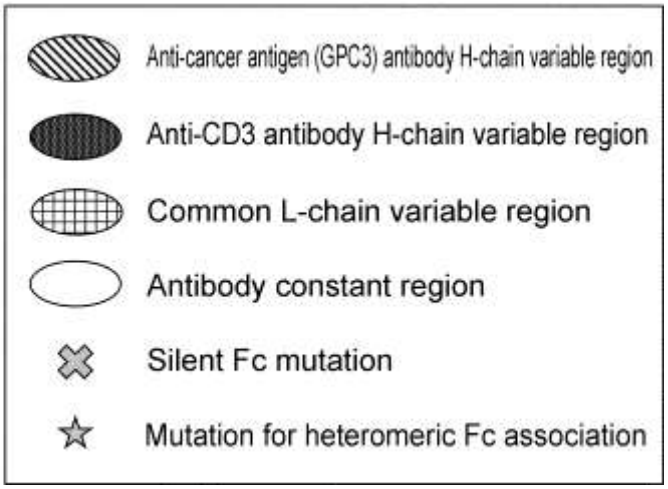


FIG. 1

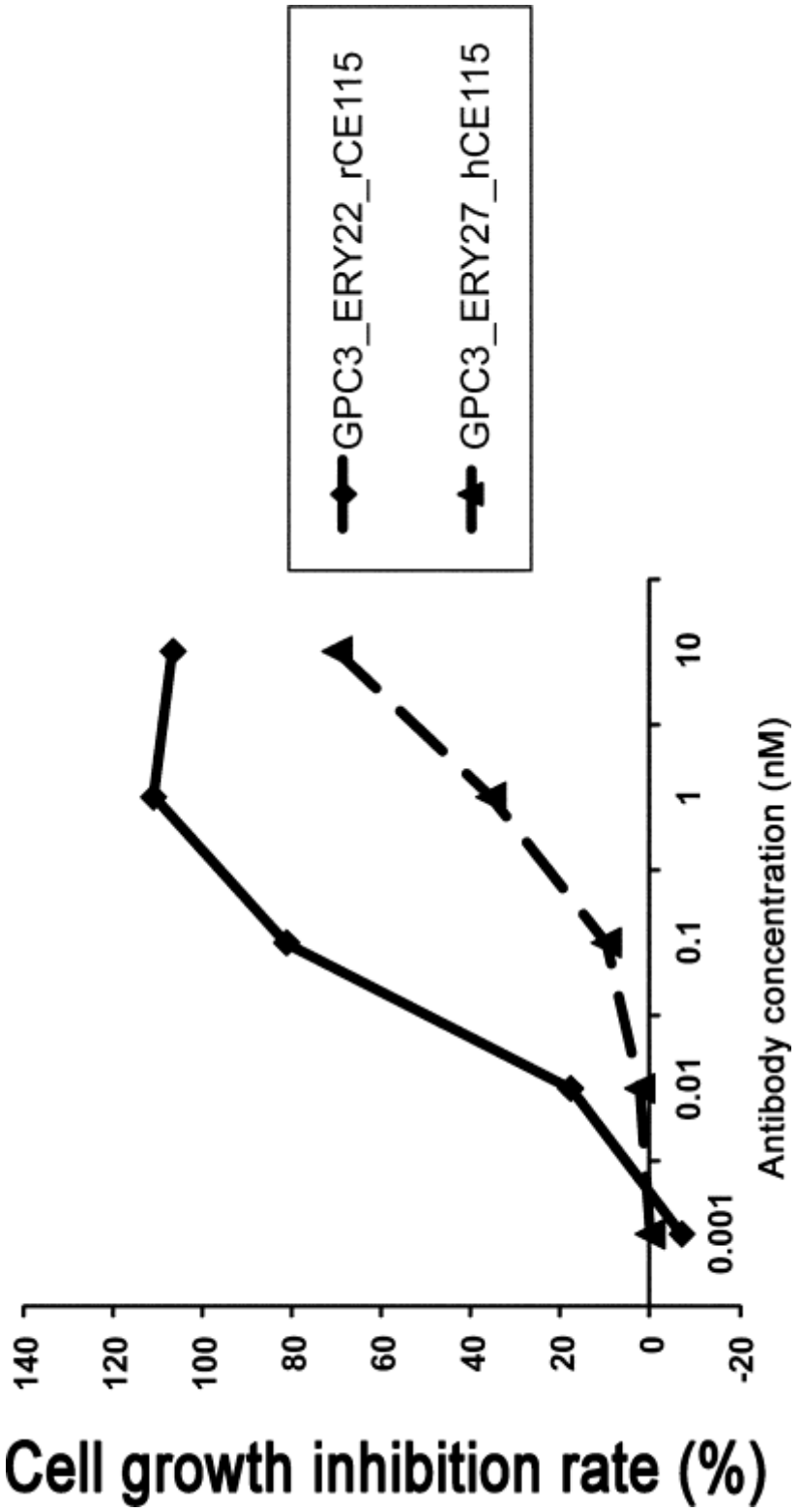

GPC3_ERY22_rCE115
GPC3_ERY27_hCE115
Cell growth inhibition rate (%)
140
120
100
80
60
40
20
0
-20
0.001
0.01
0.1
1
10
Antibody concentration (nM)

FIG. 2

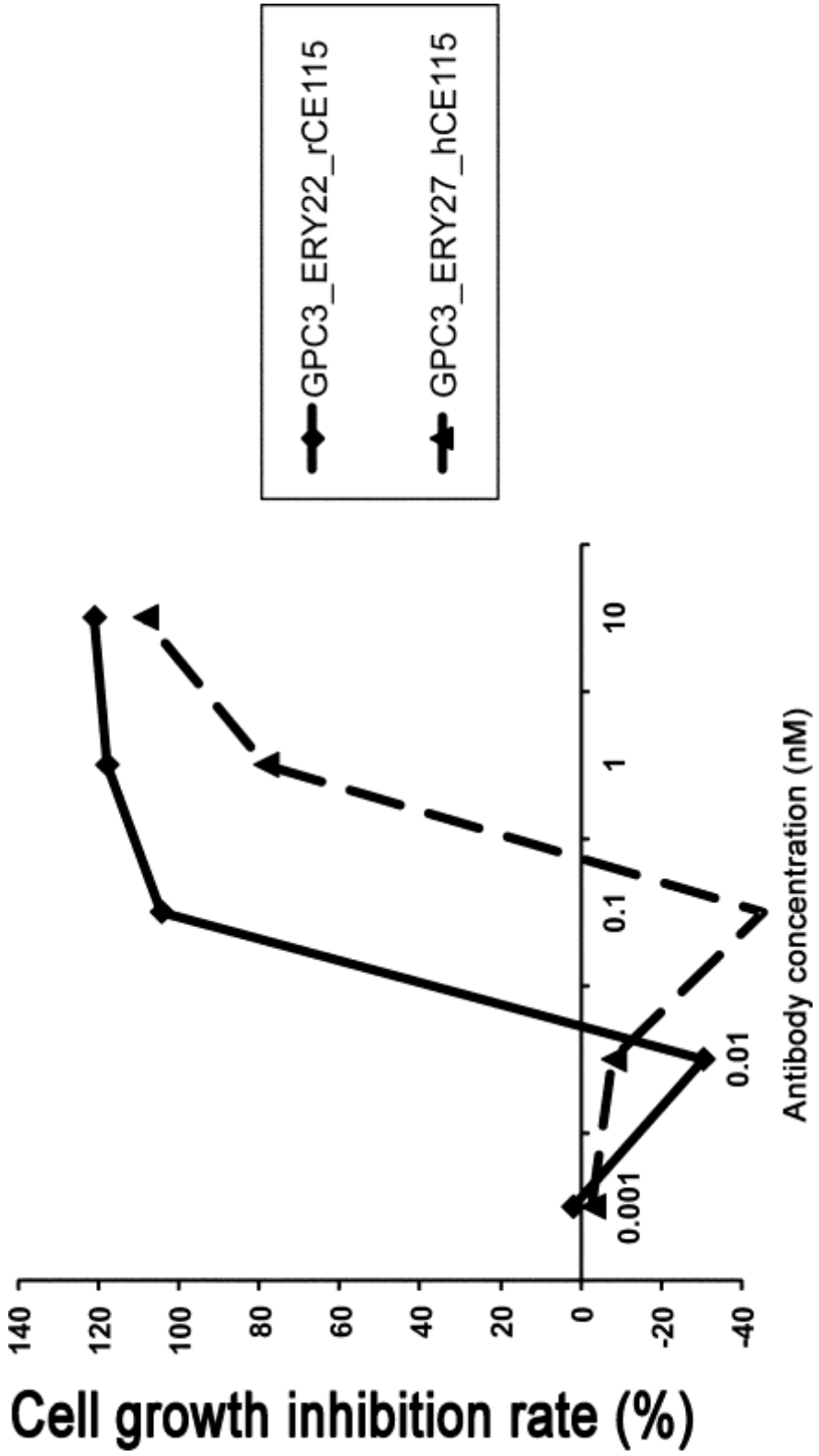

GPC3_ERY22_rCE115
GPC3_ERY27_hCE115
Cell growth inhibition rate (%)
140
120
100
80
60
40
20
0
-20
-40
0.001
0.01
0.1
1
10
Antibody concentration (nM)

FIG. 3

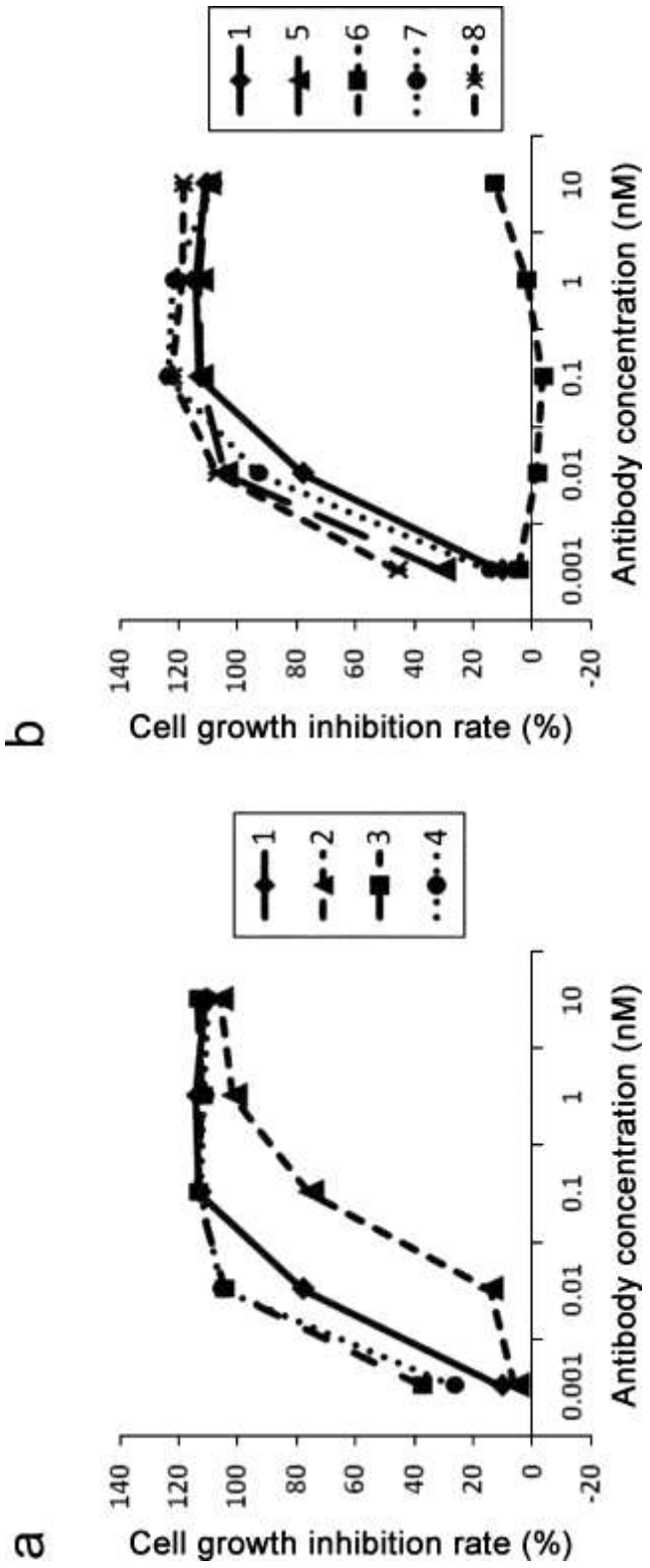

a
Cell growth inhibition rate (%)
140
120
100
80
60
40
20
0
-20
0.001
0.01
0.1
1
10
Antibody concentration (nM)
1
2
3
4
b
Cell growth inhibition rate (%)
140
120
100
80
60
40
20
0
-20
0.001
0.01
0.1
1
10
Antibody concentration (nM)
1
5
6
7
8

FIG. 4

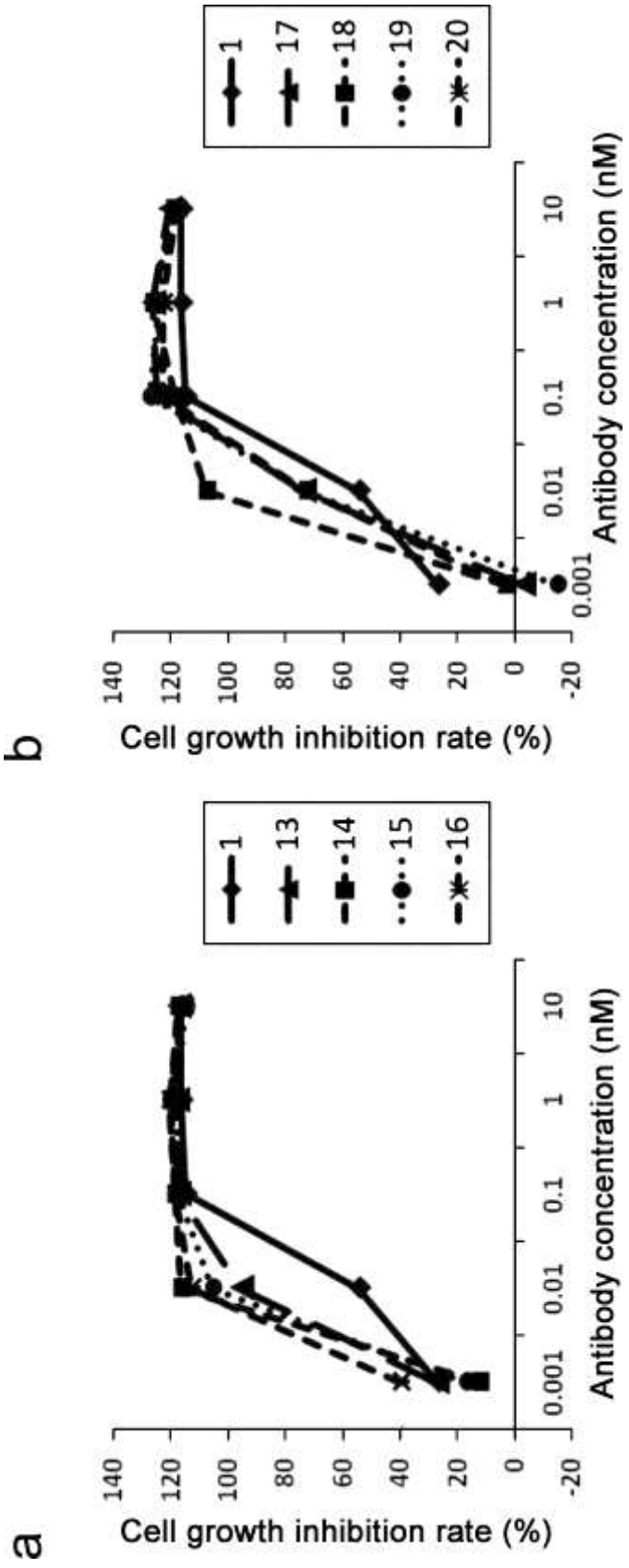

a
Cell growth inhibition rate (%)
140
120
100
80
60
40
20
0
-20
0.001
0.01
0.1
1
10
Antibody concentration (nM)
1
13
14
15
16
b
Cell growth inhibition rate (%)
140
120
100
80
60
40
20
0
-20
0.001
0.01
0.1
1
10
Antibody concentration (nM)
1
17
18
19
20

FIG. 5

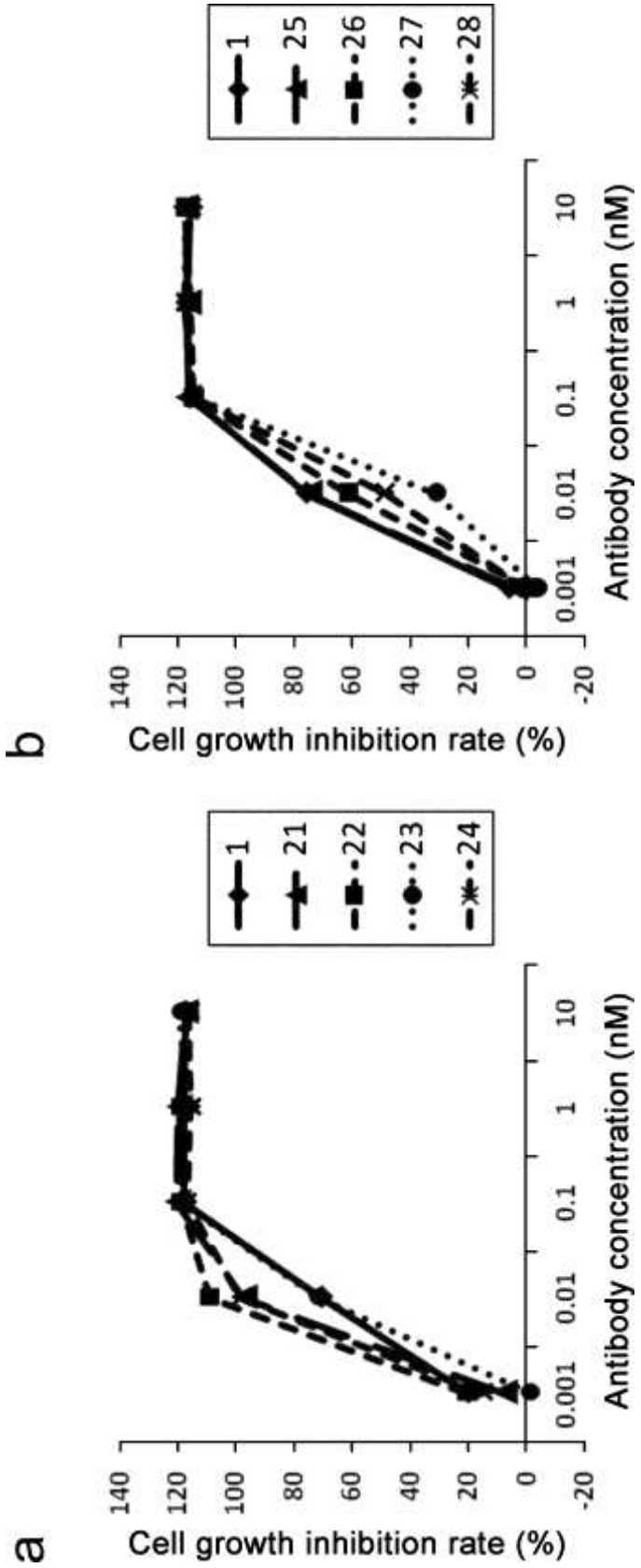

a
Cell growth inhibition rate (%)
140
120
100
80
60
40
20
0
-20
0.001
0.01
0.1
1
10
Antibody concentration (nM)
1
21
22
23
24
b
Cell growth inhibition rate (%)
140
120
100
80
60
40
20
0
-20
0.001
0.01
0.1
1
10
Antibody concentration (nM)
1
25
26
27
28

FIG. 6

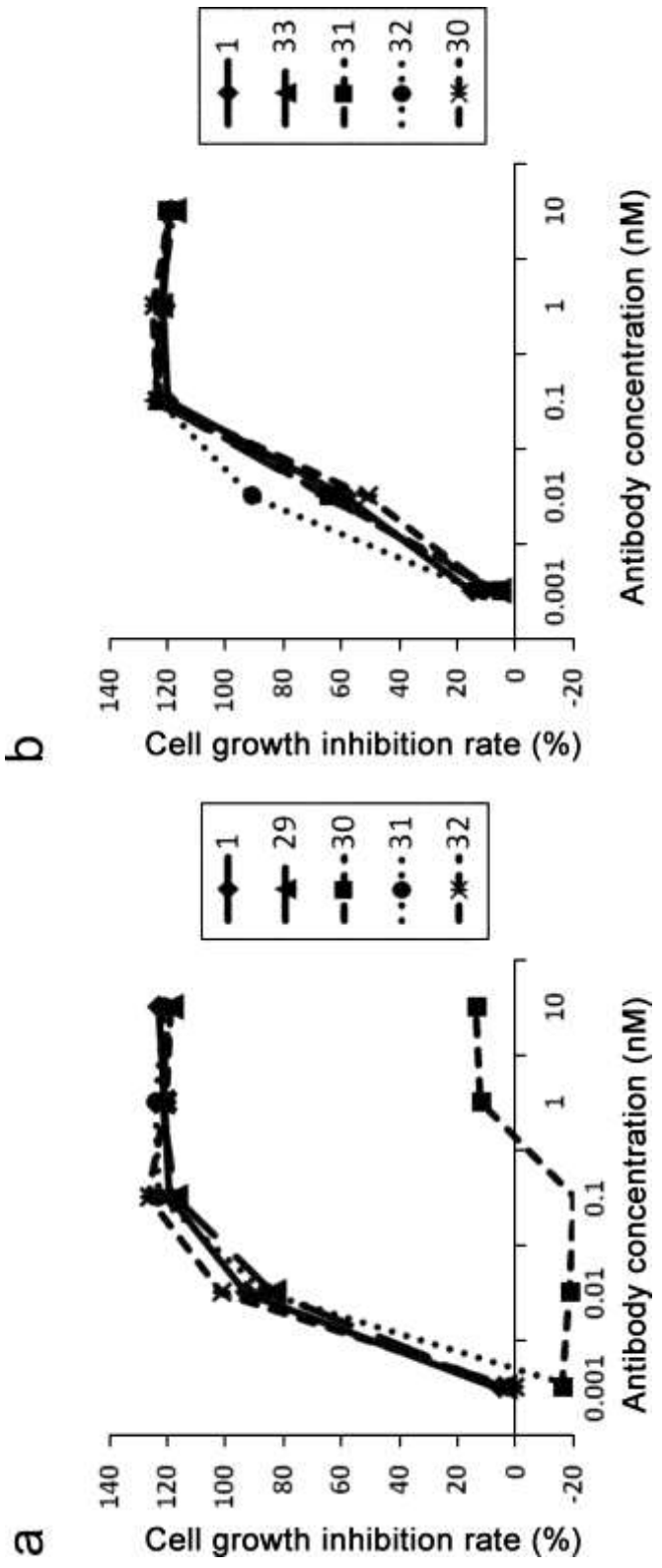

a
Cell growth inhibition rate (%)
140
120
100
80
60
40
20
0
-20
0.001
0.01
0.1
1
10
Antibody concentration (nM)
1
29
30
31
32
b
Cell growth inhibition rate (%)
Antibody concentration (nM)
1
33
31
32
30

FIG. 7

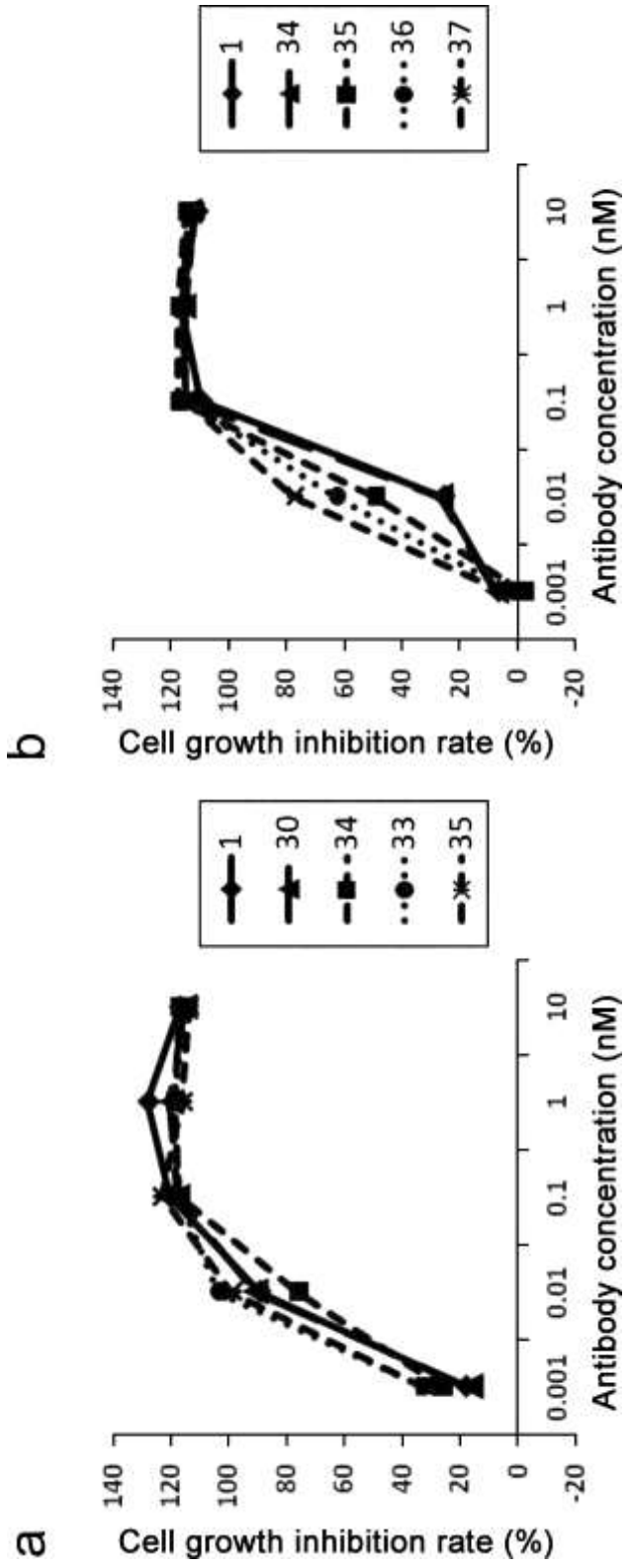

a
Cell growth inhibition rate (%)
140
120
100
80
60
40
20
0
-20
0.001
0.01
0.1
1
10
Antibody concentration (nM)
1
30
34
33
35
b
Cell growth inhibition rate (%)
140
120
100
80
60
40
20
0
-20
0.001
0.01
0.1
1
10
Antibody concentration (nM)
1
34
35
36
37

FIG. 8

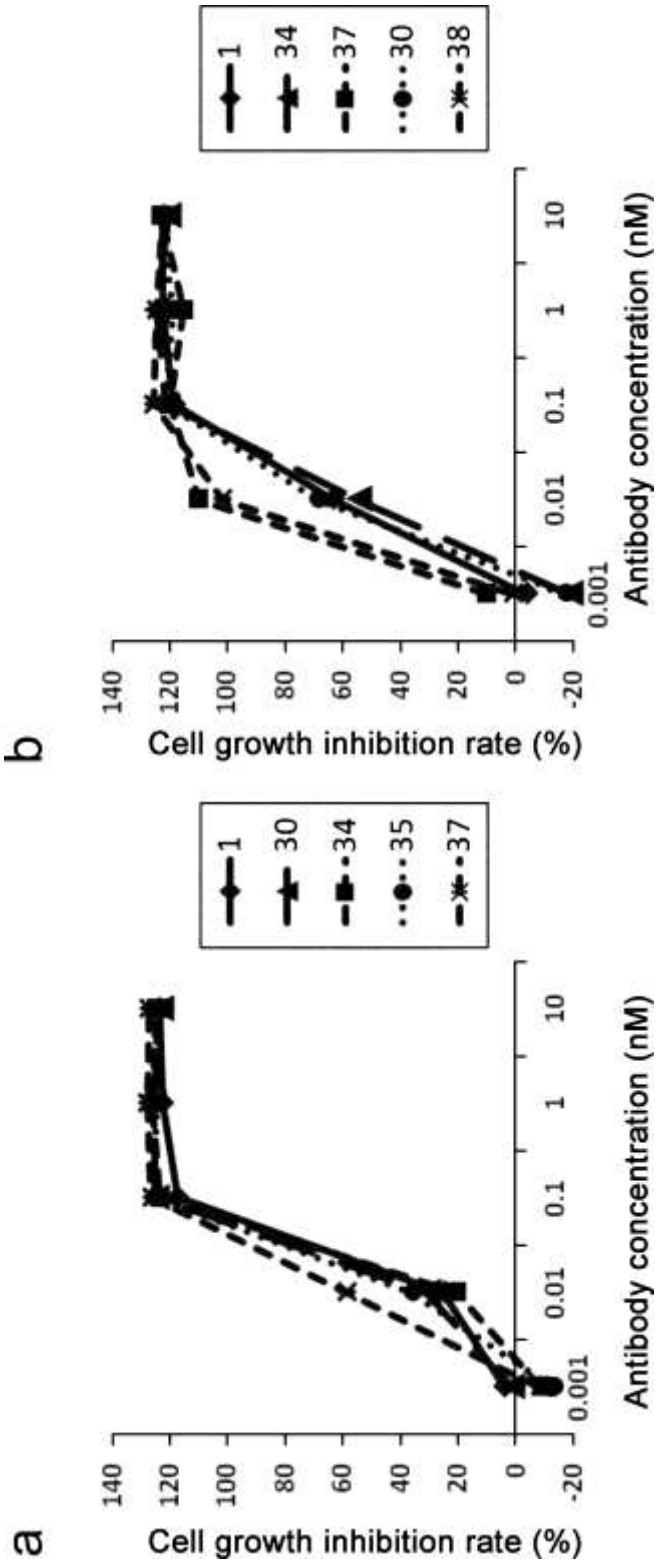

a
Cell growth inhibition rate (%)
140
120
100
80
60
40
20
0
-20
0.001
0.01
0.1
1
10
Antibody concentration (nM)
1
30
34
35
37
b
Cell growth inhibition rate (%)
140
120
100
80
60
40
20
0
-20
0.001
0.01
0.1
1
10
Antibody concentration (nM)
1
34
37
30
38

FIG. 9

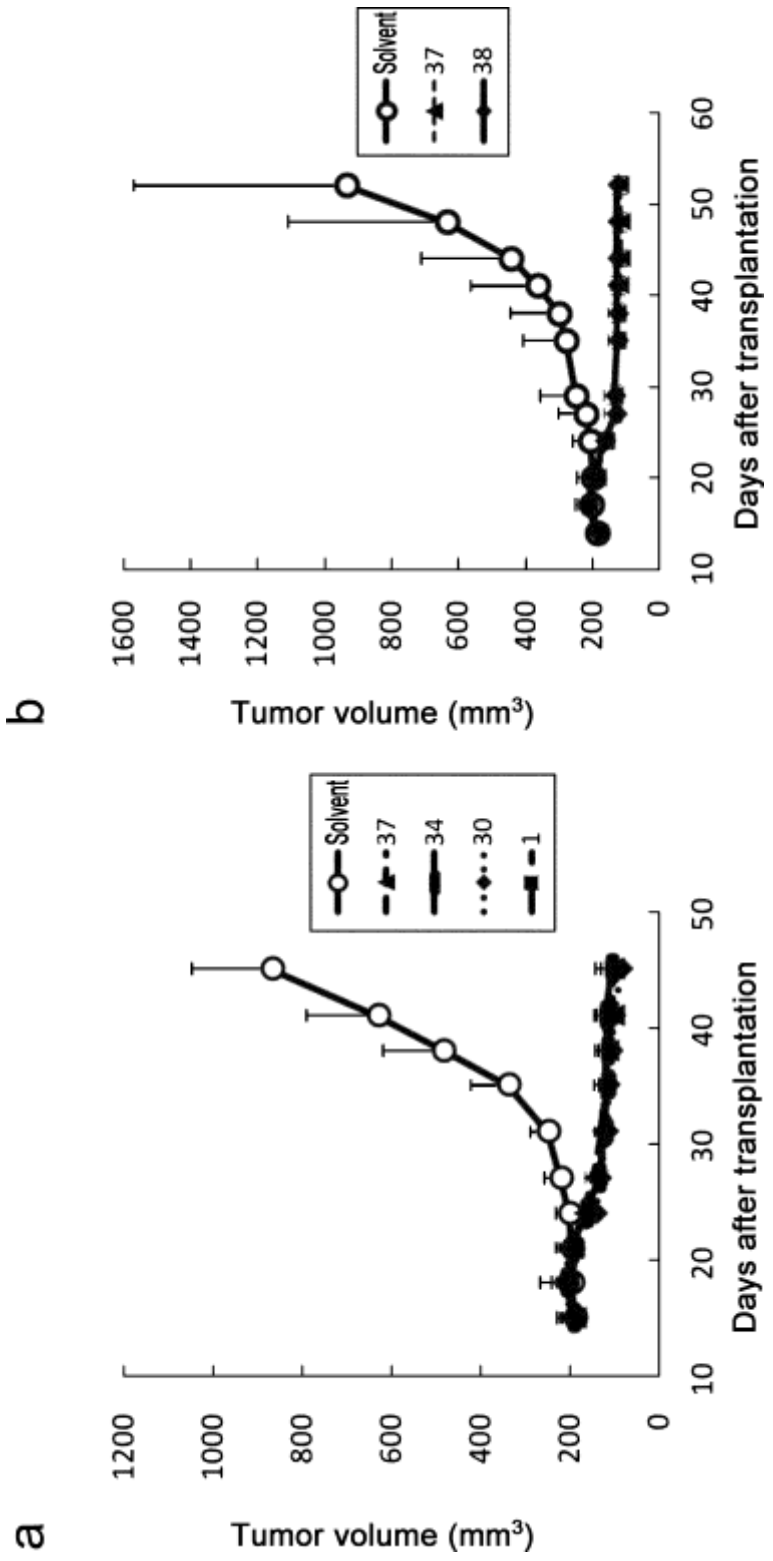

a
Tumor volume (mm3)
1200
1000
800
600
400
200
0
10
20
30
40
50
Days after transplantation
Solvent
37
34
30
1
b
Tumor volume (mm3)
1600
1400
1200
1000
800
600
400
200
0
10
20
30
40
50
60
Days after transplantation
Solvent
37
38

FIG. 10

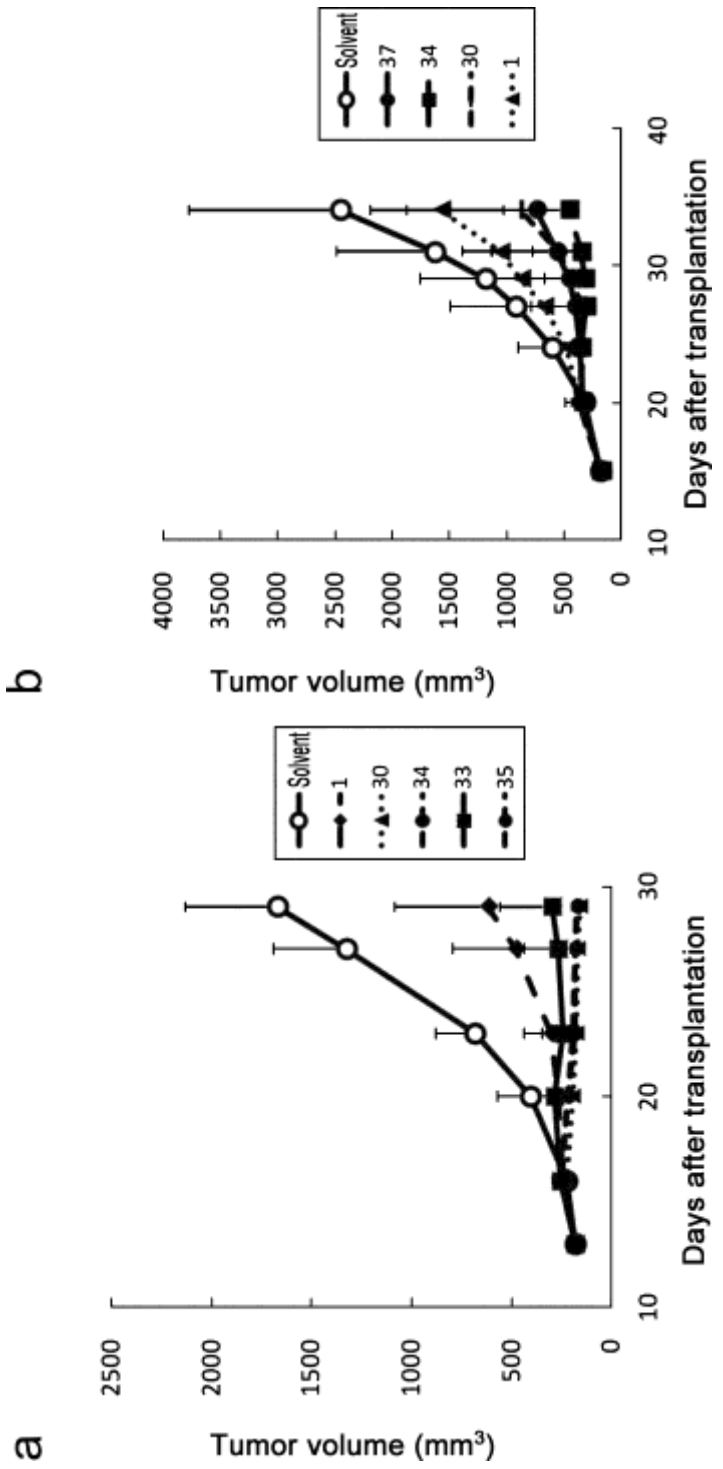

a
Tumor volume (mm³)
2500
2000
1500
1000
500
0
10
20
30
Days after transplantation
Solvent
1
30
34
33
35
b
Tumor volume (mm³)
4000
3500
3000
2500
2000
1500
1000
500
0
10
20
30
40
Days after transplantation
Solvent
37
34
30
1

FIG. 11


Kabat 1 2
EU index 1-2---------3---------4---------5---------6---------7---------8---------9---------0---------1---------2--
8-0---------0---------0---------0---------0---------0---------0---------0---------0---------0---------0--
IgG1 ASTKGPSVFPLAPSSKSTSGGTAALGCLVKDYFPEPVTVSWNSGALTSGVHTFPAVLQSSGLYSLSSVVTVPSSSLGTQTYICNVNHKPSNTKVDKKVEPKSCD-
IgG2 ASTKGPSVFPLAPCSRSTSESTAALGCLVKDYFPEPVTVSWNSGALTSGVHTFPAVLQSSGLYSLSSVVTVPSSNFGTQTYTCNVDHKPSNTKVDKTVERK--CC
IgG3 ASTKGPSVFPLAPCSRSTSGGTAALGCLVKDYFPEPVTVSWNSGALTSGVHTFPAVLQSSGLYSLSSVVTVPSSSLGTQTYTCNVNHKPSNTKVDKRVELKTPLG
IgG4 ASTKGPSVFPLAPCSRSTSESTAALGCLVKDYFPEPVTVSWNSGALTSGVHTFPAVLQSSGLYSLSSVVTVPSSSLGTKTYTCNVDHKPSNTKVDKRVESKYG--
Kabat 2
EU index 2---------3---------4---------5---------6---------7---------8
2-----8---------0---------0---------0---------0---------0---------0
IgG1 -KTHTCPP----------CPAPELLGGPSVFLFPPKPKDTLMISRTPEVTCVVVDVSHEDPEVKFNWYVD
IgG2 -V-E-CPP----------CPAPPVA-GPSVFLFPPKPKDTLMISRTPEVTCVVVDVSHEDPEVQFNWYVD
IgG3 DTTHTCPRCPEPKSCDTPPPCPRCPEPKSCDTPPPCPRCPEPKSCDTPPPCPRCPAPELLGGPSVFLFPPKPKDTLMISRTPEVTCVVVDVSHEDPEVQFKWYVD
IgG4 ---PPCPS----------CPAPEFLGGPSVFLFPPKPKDTLMISRTPEVTCVVVDVSQEDPEVQFNWYVD
Kabat 2 3
EU index 8---------9---------0---------1---------2---------3---------4---------5---------6---------7---------8-----
1---------0---------0---------0---------0---------0---------0---------0---------0---------0---------0-----
IgG1 GVEVHNAKTKPREEQYNSTYRVVSVLTVLHQDWLNGKEYKCKVSNKALPAPIEKTISKAKGQPREPQVYTLPPSRDELTKNQVSLTCLVKGFYPSDIAVEWESNG
IgG2 GVEVHNAKTKPREEQFNSTFRVVSVLTVVHQDWLNGKEYKCKVSNKGLPAPIEKTISKTKGQPREPQVYTLPPSREEMTKNQVSLTCLVKGFYPSDIAVEWESNG
IgG3 GVEVHNAKTKPREEQYNSTFRVVSVLTVLHQDWLNGKEYKCKVSNKALPAPIEKTISKTKGQPREPQVYTLPPSREEMTKNQVSLTCLVKGFYPSDIAVEWESSG
IgG4 GVEVHNAKTKPREEQFNSTYRVVSVLTVLHQDWLNGKEYKCKVSNKGLPSSIEKTISKAKGQPREPQVYTLPPSQEEMTKNQVSLTCLVKGFYPSDIAVEWESNG
Kabat 3 4
EU index 8---9---------0---------1---------2---------3---------4
6---0---------0---------0---------0---------0---------0------7
IgG1 QPENNYKTTPPVLDSDGSFFLYSKLTVDKSRWQQGNVFSCSVMHEALHNHYTQKSLSLSPGK (SEQ ID NO:23)
IgG2 QPENNYKTTPPMLDSDGSFFLYSKLTVDKSRWQQGNVFSCSVMHEALHNHYTQKSLSLSPGK (SEQ ID NO:24)
IgG3 QPENNYNTTPPMLDSDGSFFLYSKLTVDKSRWQQGNIFSCSVMHEALHNRFTQKSLSLSPGK (SEQ ID NO:25)
IgG4 QPENNYKTTPPVLDSDGSFFLYSRLTVDKSRWQEGNVFSCSVMHEALHNHYTQKSLSLSLGK (SEQ ID NO:26)

FIG. 12

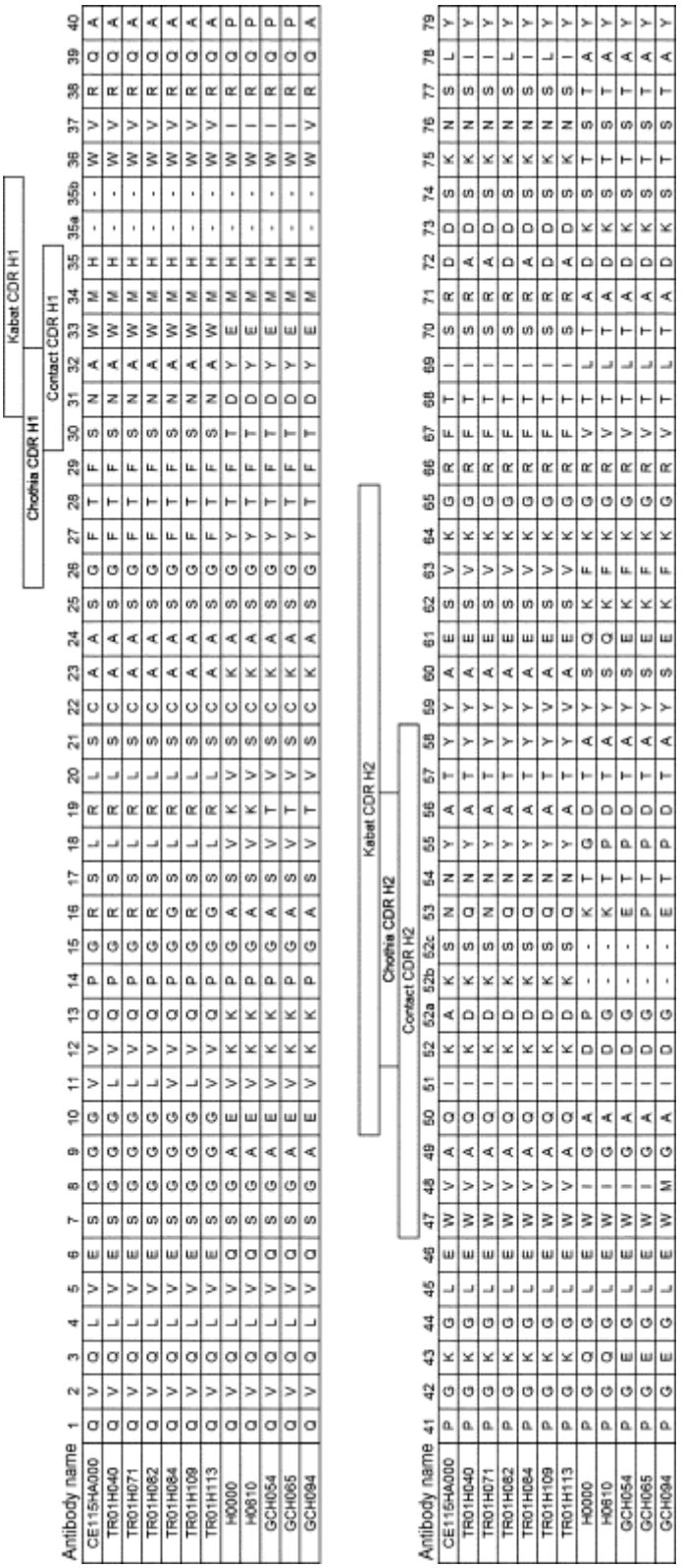

Kabat CDR H1
Chothia CDR H1
Contact CDR H1
Kabat CDR H2
Chothia CDR H2
Contact CDR H2

FIG. 13-1

Kabat CDR H3 (positions 95–102)

Chothia CDR H3 (positions 93–102)

Contact CDR H3 (positions 93–101)

Antibody name	80	81	82	82a	82b	82c	83	84	85	86	87	88	89	90	91	92
CE115HA000	L	Q	M	N	S	L	K	T	E	D	T	A	V	Y	Y	C
TR01H040	L	Q	M	N	S	L	K	T	E	D	T	A	V	Y	Y	C
TR01H071	L	Q	M	N	S	L	K	T	E	D	T	A	V	Y	Y	C
TR01H082	L	Q	M	N	S	L	K	T	E	D	T	A	V	Y	Y	C
TR01H084	L	Q	M	N	S	L	K	T	E	D	T	A	V	Y	Y	C
TR01H109	L	Q	M	N	S	L	K	T	E	D	T	A	V	Y	Y	C
TR01H113	L	Q	M	N	S	L	K	T	E	D	T	A	V	Y	Y	C
H0000	M	E	L	S	S	L	T	S	E	D	T	A	V	Y	Y	C
H0610	M	E	L	S	S	L	T	S	E	D	T	A	V	Y	Y	C
GCH054	M	E	L	S	S	L	T	S	E	D	T	A	V	Y	Y	C
GCH065	M	E	L	S	S	L	T	S	E	D	T	A	V	Y	Y	C
GCH094	M	E	L	S	S	L	T	S	E	D	T	A	V	Y	Y	C

Antibody name	93	94	95	96	97	98	99	100	100a	100b	100c	100d	100e	100f	100g	100h	100i	100j	100k	101	102	103	104	105	106	107
CE115HA000	R	Y	V	H	Y	G	A	Y	Y	G	V	-	-	-	-	-	-	-	-	D	A	W	G	Q	G	T
TR01H040	R	Y	V	H	Y	S	A	S	Y	G	V	-	-	-	-	-	-	-	-	D	A	W	G	Q	G	T
TR01H071	R	Y	V	H	Y	A	A	S	Y	G	V	-	-	-	-	-	-	-	-	D	I	W	G	Q	G	T
TR01H082	R	Y	V	H	Y	A	A	G	Y	G	V	-	-	-	-	-	-	-	-	D	A	W	G	Q	G	T
TR01H084	R	Y	V	H	Y	A	A	G	Y	G	V	-	-	-	-	-	-	-	-	D	I	W	G	Q	G	T
TR01H109	R	Y	V	H	Y	A	A	G	Y	G	V	-	-	-	-	-	-	-	-	D	A	W	G	Q	G	T
TR01H113	R	Y	V	H	Y	A	A	G	Y	G	V	-	-	-	-	-	-	-	-	D	I	W	G	Q	G	T
H0000	T	R	F	Y	S	Y	-	-	-	-	-	-	-	-	-	-	-	-	-	T	Y	W	G	Q	G	T
H0610	T	R	F	Y	S	Y	-	-	-	-	-	-	-	-	-	-	-	-	-	T	Y	W	G	Q	G	T
GCH054	T	R	F	Y	S	Y	-	-	-	-	-	-	-	-	-	-	-	-	-	T	Y	W	G	Q	G	T
GCH065	T	R	F	Y	S	Y	-	-	-	-	-	-	-	-	-	-	-	-	-	T	Y	W	G	Q	G	T
GCH094	T	R	F	Y	S	Y	-	-	-	-	-	-	-	-	-	-	-	-	-	T	Y	W	G	Q	G	T

Antibody name	108	109	110	111	112	113
CE115HA000	T	V	T	V	S	S
TR01H040	T	V	T	V	S	S
TR01H071	T	V	T	V	S	S
TR01H082	T	V	T	V	S	S
TR01H084	T	V	T	V	S	S
TR01H109	T	V	T	V	S	S
TR01H113	T	V	T	V	S	S
H0000	L	V	T	V	S	S
H0610	L	V	T	V	S	S
GCH054	L	V	T	V	S	S
GCH065	L	V	T	V	S	S
GCH094	L	V	T	V	S	S

FIG. 13-2

Kabat CDR L1: 24–34; Chothia CDR L1: 24–34; Contact CDR L1: 30–36

Antibody name	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	27a	27b	27c	27d	27e	27f	28	29	30	31	32	33	34	35	36
L0000	D	I	V	M	T	Q	S	P	L	S	L	P	V	T	P	G	E	P	A	S	I	S	C	R	S	S	Q	S	L	V	H	S	-	N	R	N	T	Y	L	H	W	Y
L0011	D	I	V	M	T	Q	S	P	L	S	L	P	V	T	P	G	E	P	A	S	I	S	C	R	S	S	Q	P	L	V	H	S	-	N	R	N	T	Y	L	H	W	Y
L0201	D	I	V	M	T	Q	S	P	L	S	L	P	V	T	P	G	E	P	A	S	I	S	C	R	S	S	Q	P	P	V	H	S	-	N	R	N	T	Y	L	H	W	Y
L0203	D	I	V	M	T	Q	S	P	L	S	L	P	V	T	P	G	E	P	A	S	I	S	C	R	S	S	Q	S	P	V	H	S	-	N	R	N	T	Y	I	H	W	Y
L0204	D	I	V	M	T	Q	S	P	L	S	L	P	V	T	P	G	E	P	A	S	I	S	C	R	S	S	Q	S	P	V	H	S	-	N	R	N	T	Y	L	H	W	Y
L0206	D	I	V	M	T	Q	S	P	L	S	L	P	V	T	P	G	E	P	A	S	I	S	C	R	S	S	Q	S	P	V	H	S	-	N	R	N	T	Y	L	H	W	Y
L0208	D	I	V	M	T	Q	S	P	L	S	L	P	V	T	P	G	E	P	A	S	I	S	C	R	S	S	Q	S	P	V	H	S	-	N	R	N	T	Y	L	H	W	Y
L0209	D	I	V	M	T	Q	S	P	L	S	L	P	V	T	P	G	E	P	A	S	I	S	C	R	S	S	Q	S	P	V	H	S	-	N	R	N	T	Y	I	H	W	Y
L0211	D	I	V	M	T	Q	S	P	L	S	L	P	V	T	P	G	E	P	A	S	I	S	C	R	S	S	Q	P	P	V	H	S	-	N	R	N	T	Y	L	H	W	Y
L0212	D	I	V	M	T	Q	S	P	L	S	L	P	V	T	P	G	E	P	A	S	I	S	C	R	P	S	Q	S	P	V	H	S	-	N	R	N	T	Y	L	H	W	Y
L0222	D	I	V	M	T	Q	S	P	L	S	L	P	V	T	P	G	E	P	A	S	I	S	C	R	S	S	Q	S	P	V	H	S	-	N	R	N	T	Y	I	Q	W	Y
L0272	D	I	V	M	T	Q	S	P	L	S	L	P	V	T	P	G	E	P	A	S	I	S	C	R	S	S	Q	P	L	V	H	S	-	N	R	Q	T	Y	L	H	W	Y

Kabat CDR L2: 50–56; Chothia CDR L2: 50–56; Contact CDR L2: 46–55

Antibody name	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78
L0000	Q	Q	K	P	G	Q	A	P	R	L	L	I	Y	K	V	S	N	R	F	S	G	V	P	D	R	F	S	G	S	G	S	G	T	D	F	T	L	K	I	S	R	V
L0011	Q	Q	K	P	G	Q	A	P	R	L	L	I	Y	K	V	S	N	R	F	S	G	V	P	D	R	F	S	G	S	G	S	G	T	D	F	T	L	K	I	S	R	V
L0201	Q	Q	K	P	G	Q	A	P	R	L	L	I	Y	K	V	S	N	R	F	S	G	V	P	D	R	F	S	G	S	G	S	G	T	D	F	T	L	K	I	S	R	V
L0203	Q	Q	K	P	G	Q	A	P	R	L	L	I	Y	K	V	S	N	R	F	S	G	V	P	D	R	F	S	G	S	G	S	G	T	D	F	T	L	K	I	S	R	V
L0204	Q	Q	K	P	G	Q	A	P	R	L	L	I	Y	K	V	S	N	R	F	R	G	V	P	D	R	F	S	G	S	G	S	G	T	D	F	T	L	K	I	S	R	V
L0206	Q	Q	K	P	G	Q	A	P	R	L	L	I	Y	K	V	S	N	R	F	S	G	V	P	D	R	F	S	G	S	G	S	G	T	D	F	T	L	K	I	S	R	V
L0208	Q	Q	K	P	G	Q	A	P	R	L	L	I	Y	K	V	S	N	R	F	W	G	V	P	D	R	F	S	G	S	G	S	G	T	D	F	T	L	K	I	S	R	V
L0209	Q	Q	K	P	G	Q	A	P	R	L	L	I	Y	K	V	S	N	R	F	S	G	V	P	D	R	F	S	G	S	G	S	G	T	D	F	T	L	K	I	S	R	V
L0211	Q	Q	K	P	G	Q	A	P	R	L	L	I	Y	K	V	S	N	R	F	S	G	V	P	D	R	F	S	G	S	G	S	G	T	D	F	T	L	K	I	S	R	V
L0212	Q	Q	K	P	G	Q	A	P	R	L	L	I	Y	K	V	S	N	R	F	S	G	V	P	D	R	F	S	G	S	G	S	G	T	D	F	T	L	K	I	S	R	V
L0222	Q	Q	K	P	G	Q	A	P	R	L	L	I	Y	K	V	S	N	R	F	S	G	V	P	D	R	F	S	G	S	G	S	G	T	D	F	T	L	K	I	S	R	V
L0272	Q	Q	K	P	G	Q	A	P	R	L	L	I	Y	K	V	S	N	R	F	S	G	V	P	D	R	F	S	G	S	G	S	G	T	D	F	T	L	K	I	S	R	V

Kabat CDR L3: 89–97; Chothia CDR L3: 89–97; Contact CDR L3: 89–96

Antibody name	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	95a	95b	95c	95d	95e	95f	96	97	98	99	100	101	102	103	104	105	106	107
L0000	E	A	E	D	V	G	V	Y	Y	C	G	Q	G	T	Q	V	P	-	-	-	-	-	-	Y	T	F	G	Q	G	T	K	L	E	I	K
L0011	E	A	E	D	V	G	V	Y	Y	C	G	Q	G	T	Q	V	P	-	-	-	-	-	-	Y	T	F	G	Q	G	T	K	L	E	I	K
L0201	E	A	E	D	V	G	V	Y	Y	C	G	Q	G	T	Q	V	P	-	-	-	-	-	-	Y	T	F	G	Q	G	T	K	L	E	I	K
L0203	E	A	E	D	V	G	V	Y	Y	C	G	Q	G	T	Q	V	P	-	-	-	-	-	-	Y	T	F	G	Q	G	T	K	L	E	I	K
L0204	E	A	E	D	V	G	V	Y	Y	C	G	Q	G	T	Q	V	P	-	-	-	-	-	-	Y	T	F	G	Q	G	T	K	L	E	I	K
L0206	E	A	E	D	V	G	V	Y	Y	C	Y	Q	G	T	Q	V	P	-	-	-	-	-	-	Y	T	F	G	Q	G	T	K	L	E	I	K
L0208	E	A	E	D	V	G	V	Y	Y	C	Y	Q	G	T	Q	V	P	-	-	-	-	-	-	Y	T	F	G	Q	G	T	K	L	E	I	K
L0209	E	A	E	D	V	G	V	Y	Y	C	Y	Q	G	T	Q	V	P	-	-	-	-	-	-	Y	T	F	G	Q	G	T	K	L	E	I	K
L0211	E	A	E	D	V	G	V	Y	Y	C	Y	Q	G	T	Q	V	P	-	-	-	-	-	-	Y	T	F	G	Q	G	T	K	L	E	I	K
L0212	E	A	E	D	V	G	V	Y	Y	C	Y	Q	G	T	Q	V	P	-	-	-	-	-	-	Y	T	F	G	Q	G	T	K	L	E	I	K
L0222	E	A	E	D	V	G	V	Y	Y	C	Y	Q	G	T	Q	V	P	-	-	-	-	-	-	Y	T	F	G	Q	G	T	K	L	E	I	K
L0272	E	A	E	D	V	G	V	Y	Y	C	G	Q	G	T	Q	V	P	-	-	-	-	-	-	Y	T	F	G	Q	G	T	K	L	E	I	K

FIG. 14