

Figure 1

Numbering according to Kabat (VH)	Numbering according to Chothia (VH)	Aho numbering	IMGT
11	11	12	12
14	14	15	15
41	41	48	46
42	42	49	47
87	87	101	99
89	89	103	101
108	108	144	---
110	110	146	---
112	112	148	---
Source: http://www.bioc.uzh.ch/plueckthun/antibody/Numbering/NumFrame.html			

Figure 2

SEQ ID NO	Description	Sequence
1	Reference	EVQLVESGGGLVQPGNSLRRLSCAASGFTFSSFGMSWVR QAPGKGLEWVSSISGSGSDTLYADSVKGRFTISRDNKT TLYLQMNSLRPEDTAVYYCTIGGSLSRSSQGTLVTVSS
2	Reference	EVQLLESGGGLVQPGGSLRLSCAASGFTFRSFGMSWVR QAPGKGPEWVSSISGSGSDTLYADSVKGRFTISRDNKN TLYLQMNSLRPEDTAVYYCTIGGSLSRSSQGTLVTVSS
3	CDR1 (Kabat)	SFGMS
4	CDR2 (Kabat)	SISGSGSDTLYADSVKG
5	CDR3 (Kabat/Abm)	GGSLSR
6	CDR1 (Abm)	GFTFRSFGMS
7	CDR2 (Abm)	SISGSGSDTL
8	CDR3 (Kabat/Abm)	GGSLSR
9	CDR1 (Kabat)	SYVMG
10	CDR2 (Kabat)	AISRSGGYTTYADSVKG
11	CDR1 (Abm)	GSNISSYVMG
12	CDR1 (Abm)	GSTISSYVMG
13	CDR2 (Abm)	AISRSGGYTY
14	CDR3 (Kabat/Abm)	GRYSAWYSQSYEYDY
15	C-terminal sequence	VTVSS
16	15GS linker	GGGGSGGGGSGGGGS
17	35 GS linker	GGGGSGGGGSGGGGSGGGGSGGGGSGGGGSGGGGS

Figure 2 (continued)

SEQ ID NO	Description	Sequence
18	Invention	EVQLVESGGGLVQAGGSLRLSCAASGSNISSYVMGWFR RAPGKEREFVAAISRSGGYTTYADSVKGRFTISRDNK KTAYLQMNSLEPEDTAVYYCAAGRYSAWYSQSYEYDY WGQGTLVTVSS
19	Invention	EVQLVESGGGVVQPGGSLRLSCAASGSTISSYVMGWFR RAPGKEREFVAAISRSGGYTTYADSVKGRFTISRDNKSK TAYLQMNSLRPEDTALYYCAAGRYSAWYSQSYEYDY WGQGTLVTVSS
20	Invention	EVQLVESGGGVVQPGGSLRLSCAASGSNISSYVMGWFR RAPGKEREFVAAISRSGGYTTYADSVKGRFTISRDNKSK TAYLQMNSLRPEDTALYYCAAGRYSAWYSQSYEYDY WGQGTLVTVSS
21	Invention	EVQLVESGGGVVQPGGSLRLSCAASGSTISSYVMGWFR QAPGKEREFVAAISRSGGYTTYADSVKGRFTISRDNKSK TAYLQMNSLRPEDTALYYCAAGRYSAWYSQSYEYDY WGQGTLVTVSS
22	Invention	EVQLVESGGGVVQPGGSLRLSCAASGSTISSYVMGWFR RAPGKEREFVAAISRSGGYTTYADSVKGRFTISRDNKSK TAYLQMNSLRPEDTALYYCAAGRYSAWYSQSYEYDY WGQGTLVTVSS
23	Invention	EVQLVESGGGVVQPGGSLRLSCAASGSTISSYVMGWFR RAPGKEREFVAAISRSGGYTTYADSVKGRFTISRDNKSK TVYLMNSLRPEDTALYYCAAGRYSAWYSQSYEYDY WGQGTLVTVSS
24	Invention	EVQLVESGGGVVQPGGSLRLSCAASGSTISSYVMGWFR QAPGKEREFVAAISRSGGYTTYADSVKGRFTISRDNKSK TAYLQMNSLRPEDTALYYCAAGRYSAWYSQSYEYDY WGQGTLVTVSS
25	Invention	EVQLVESGGGVVQPGGSLRLSCAASGSTISSYVMGWFR QAPGKEREFVAAISRSGGYTTYADSVKGRFTISRDNKSK TVYLMNSLRPEDTALYYCAAGRYSAWYSQSYEYDY WGQGTLVTVSS
26	Invention	EVQLVESGGGVVQPGGSLRLSCAASGSTISSYVMGWFR RAPGKEREFVAAISRSGGYTTYADSVKGRFTISRDNKSK TVYLMNSLRPEDTALYYCAAGRYSAWYSQSYEYDY WGQGTLVTVSS

Figure 2 (continued)

SEQ ID NO	Description	Sequence
27	Invention	EVQLVESGGGVVQPGGSLRLSCAASGSTISSYVMGWFR QAPGKEREFVAAISRSGGYTTYADSVKGRFTISRDN SKN TVY LQMNSLRPEDTALYYCAAGRYSAWYSQSYEYDY WGQGTLVTVSS
28	Invention	EVQLVESGGGVVQPGGSLRLSCAASGSTISSYVMGWFR RAPGKEREFVAAISRSGGYTTYADSVKGRFTISRDN SKK TVY LQMNSLRPEDTALYYCAAGRYSAWYSQSYEYDY WGQGTLVTVSS
29	Invention	EVQLVESGGGVVQPGGSLRLSCAASGSTISSYVMGWFR QAPGKEREFVAAISRSGGYTTYADSVKGRFTISRDN SKK TVY LQMNSLRPEDTALYYCAAGRYSAWYSQSYEYDY WGQGTLVTVSS
30	Invention	EVQLVESGGGVVQPGGSLRLSCAASGSTISSYVMGWFR RAPGKEREFVAAISRSGGYTTYADSVKGRFTISRDN SKN TVY LQMNSLRPEDTALYYCAAGRYSAWYSQSYEYDY WGQGTLVTVSS
31	Invention	EVQLVESGGGVVQPGGSLRLSCAASGSTISSYVMGWFR QAPGKEREFVAAISRSGGYTTYADSVKGRFTISRDN SKN TVY LQMNSLRPEDTALYYCAAGRYSAWYSQSYEYDY WGQGTLVTVSS
32	Invention	EVQLVESGGGLVQAGGSLRLSCAASGSNISSYVMGWFR RAPGKEREFVAAISRSGGYTTYADSVKGRFTISRDN AK KTAY LQMNSLEPEDTAVYYCAAGRYSAWYSQSYEYDY WGQGTLVTVSSA
33	Invention	EVQLVESGGGVVQPGGSLRLSCAASGSTISSYVMGWFR RAPGKEREFVAAISRSGGYTTYADSVKGRFTISRDN SKK TAY LQMNSLRPEDTALYYCAAGRYSAWYSQSYEYDY WGQGTLVTVSSA
34	Invention	EVQLVESGGGVVQPGGSLRLSCAASGSNISSYVMGWFR RAPGKEREFVAAISRSGGYTTYADSVKGRFTISRDN SKK TAY LQMNSLRPEDTALYYCAAGRYSAWYSQSYEYDY WGQGTLVTVSSA
35	Invention	EVQLVESGGGVVQPGGSLRLSCAASGSTISSYVMGWFR QAPGKEREFVAAISRSGGYTTYADSVKGRFTISRDN SKK TAY LQMNSLRPEDTALYYCAAGRYSAWYSQSYEYDY WGQGTLVTVSSA

Figure 2 (continued)

SEQ ID NO	Description	Sequence
36	Invention	EVQLVESGGGVVQPGGSLRLSCAASGSTISSYVMGWFR RAPGKEREFVAAISRSGGYTTYADSVKGRFTISRDN SKN TAYLQMNSLRPEDTALYYCAAGRYSAWYSQSYEYDY WGQGTLVTVSSA
37	Invention	EVQLVESGGGVVQPGGSLRLSCAASGSTISSYVMGWFR RAPGKEREFVAAISRSGGYTTYADSVKGRFTISRDN SKK TVY LQMNSLRPEDTALYYCAAGRYSAWYSQSYEYDY WGQGTLVTVSSA
38	Invention	EVQLVESGGGVVQPGGSLRLSCAASGSTISSYVMGWFR QAPGKEREFVAAISRSGGYTTYADSVKGRFTISRDN SKN TAYLQMNSLRPEDTALYYCAAGRYSAWYSQSYEYDY WGQGTLVTVSSA
39	Invention	EVQLVESGGGVVQPGGSLRLSCAASGSTISSYVMGWFR QAPGKEREFVAAISRSGGYTTYADSVKGRFTISRDN SKK TVY LQMNSLRPEDTALYYCAAGRYSAWYSQSYEYDY WGQGTLVTVSSA
40	Invention	EVQLVESGGGVVQPGGSLRLSCAASGSTISSYVMGWFR RAPGKEREFVAAISRSGGYTTYADSVKGRFTISRDN SKN TVY LQMNSLRPEDTALYYCAAGRYSAWYSQSYEYDY WGQGTLVTVSSA
41	Invention	EVQLVESGGGVVQPGGSLRLSCAASGSTISSYVMGWFR QAPGKEREFVAAISRSGGYTTYADSVKGRFTISRDN SKN TVY LQMNSLRPEDTALYYCAAGRYSAWYSQSYEYDY WGQGTLVTVSSA
42	Invention	EVQLVESGGGVVQPGGSLRLSCAASGSTISSYVMGWFR RAPGKEREFVAAISRSGGYTTYADSVKGRFTISRDN SKK TVY LQMNSLRPEDTALYYCAAGRYSAWYSQSYEYDY WGQGTLVTVSSA
43	Invention	EVQLVESGGGVVQPGGSLRLSCAASGSTISSYVMGWFR QAPGKEREFVAAISRSGGYTTYADSVKGRFTISRDN SKK TVY LQMNSLRPEDTALYYCAAGRYSAWYSQSYEYDY WGQGTLVTVSSA
44	Invention	EVQLVESGGGVVQPGGSLRLSCAASGSTISSYVMGWFR RAPGKEREFVAAISRSGGYTTYADSVKGRFTISRDN SKN TVY LQMNSLRPEDTALYYCAAGRYSAWYSQSYEYDY WGQGTLVTVSSA

Figure 2 (continued)

SEQ ID NO	Description	Sequence
45	Invention	EVQLVESGGGVVQPGGSLRLSCAASGSTISSYVMGWFR QAPGKEREFVAAISRSGGYTTYADSVKGRFTISRDN SKN TVY LQMNSLRPEDTALYYCAAGRYSAWYSQSYEYDY WGQGTLVTVSSA
46	Invention	DVQLVESGGGLVQAGGSLRLSCAASGSNISSYVMGWFR RAPGKEREFVAAISRSGGYTTYADSVKGRFTISRDN AK KTAY LQMNSLEPEDTAVYYCAAGRYSAWYSQSYEYDY WGQGTLVTVSS
47	Invention	DVQLVESGGGVVQPGGSLRLSCAASGSTISSYVMGWFR RAPGKEREFVAAISRSGGYTTYADSVKGRFTISRDN SKK TAY LQMNSLRPEDTALYYCAAGRYSAWYSQSYEYDY WGQGTLVTVSS
48	Invention	DVQLVESGGGVVQPGGSLRLSCAASGSNISSYVMGWFR RAPGKEREFVAAISRSGGYTTYADSVKGRFTISRDN SKK TAY LQMNSLRPEDTALYYCAAGRYSAWYSQSYEYDY WGQGTLVTVSS
49	Invention	DVQLVESGGGVVQPGGSLRLSCAASGSTISSYVMGWFR QAPGKEREFVAAISRSGGYTTYADSVKGRFTISRDN SKK TAY LQMNSLRPEDTALYYCAAGRYSAWYSQSYEYDY WGQGTLVTVSS
50	Invention	DVQLVESGGGVVQPGGSLRLSCAASGSTISSYVMGWFR RAPGKEREFVAAISRSGGYTTYADSVKGRFTISRDN SKN TAY LQMNSLRPEDTALYYCAAGRYSAWYSQSYEYDY WGQGTLVTVSS
51	Invention	DVQLVESGGGVVQPGGSLRLSCAASGSTISSYVMGWFR RAPGKEREFVAAISRSGGYTTYADSVKGRFTISRDN SKK TVY LQMNSLRPEDTALYYCAAGRYSAWYSQSYEYDY WGQGTLVTVSS
52	Invention	DVQLVESGGGVVQPGGSLRLSCAASGSTISSYVMGWFR QAPGKEREFVAAISRSGGYTTYADSVKGRFTISRDN SKN TAY LQMNSLRPEDTALYYCAAGRYSAWYSQSYEYDY WGQGTLVTVSS
53	Invention	DVQLVESGGGVVQPGGSLRLSCAASGSTISSYVMGWFR QAPGKEREFVAAISRSGGYTTYADSVKGRFTISRDN SKK TVY LQMNSLRPEDTALYYCAAGRYSAWYSQSYEYDY WGQGTLVTVSS

Figure 2 (continued)

SEQ ID NO	Description	Sequence
54	Invention	DVQLVESGGGVVQPGGSLRLSCAASGSTISSYVMGWFR RAPGKEREFVAAISRSGGYTTYADSVKGRFTISRDN SKN TVY LQMNSLRPEDTALYYCAAGRYSAWYSQSYEYDY WGQGTLVTVSS
55	Invention	DVQLVESGGGVVQPGGSLRLSCAASGSTISSYVMGWFR QAPGKEREFVAAISRSGGYTTYADSVKGRFTISRDN SKN TVY LQMNSLRPEDTALYYCAAGRYSAWYSQSYEYDY WGQGTLVTVSS
56	Invention	DVQLVESGGGVVQPGGSLRLSCAASGSTISSYVMGWFR RAPGKEREFVAAISRSGGYTTYADSVKGRFTISRDN SKK TVY LQMNSLRPEDTALYYCAAGRYSAWYSQSYEYDY WGQGTLVTVSS
57	Invention	DVQLVESGGGVVQPGGSLRLSCAASGSTISSYVMGWFR QAPGKEREFVAAISRSGGYTTYADSVKGRFTISRDN SKK TVY LQMNSLRPEDTALYYCAAGRYSAWYSQSYEYDY WGQGTLVTVSS
58	Invention	DVQLVESGGGVVQPGGSLRLSCAASGSTISSYVMGWFR RAPGKEREFVAAISRSGGYTTYADSVKGRFTISRDN SKN TVY LQMNSLRPEDTALYYCAAGRYSAWYSQSYEYDY WGQGTLVTVSS
59	Invention	DVQLVESGGGVVQPGGSLRLSCAASGSTISSYVMGWFR QAPGKEREFVAAISRSGGYTTYADSVKGRFTISRDN SKN TVY LQMNSLRPEDTALYYCAAGRYSAWYSQSYEYDY WGQGTLVTVSS

Figure 2 (continued)

SEQ ID NO	Description	Sequence
60	anti-HER2-Nanobody	EVQLVESGGGLVQAGGSLRLSCAASGITFSINTMGWYR QAPGKQRELVALISSIGDTYYADSVKGRFTISRDNKNT VYLQMNSLKPEDTAVYYCKRFRTAAQGTDYWGQGT LTVSS
61	Compound of the invention	DVQLVESGGGLVQAGGSLRLSCAASGITFSINTMGWYR QAPGKQRELVALISSIGDTYYADSVKGRFTISRDNKNT VYLQMNSLKPEDTAVYYCKRFRTAAQGTDYWGQGT LTVSSGGGGSGGGGSGGGGSGGGGSGGGGSGGGGSGG GGSEVQLVESGGGVVQPGGSLRLSCAASGSTISSYVMG WFRRAPGKEREFVAAISRSGGYTTYADSVKGRFTISR DNSKKTAYLQMNSLRPEDTALYYCAAGRYSAWYSQSYE YDYWGQGT LTVSSA
62	Compound of the invention	DVQLVESGGGLVQAGGSLRLSCAASGITFSINTMGWYR QAPGKQRELVALISSIGDTYYADSVKGRFTISRDNKNT VYLQMNSLKPEDTAVYYCKRFRTAAQGTDYWGQGT LTVSSGGGGSGGGGSGGGGSEVQLVESGGGVVQPGGS LRLSCAASGSTISSYVMGWFRRAPGKEREFVAAISRSGG YTTYADSVKGRFTISRDNKKTAYLQMNSLRPEDTALY YCAAGRYSAWYSQSYEYDYWGQGT LTVSSA
63	Compound of the invention	DVQLVESGGGVVQPGGSLRLSCAASGSTISSYVMGWFR RAPGKEREFVAAISRSGGYTTYADSVKGRFTISRDNKKT TAYLQMNSLRPEDTALYYCAAGRYSAWYSQSYEYDY WGQGT LTVSSGGGGSGGGGSGGGGSEVQLVESGGGL VQAGGSLRLSCAASGITFSINTMGWYRQAPGKQRELVA LISSIGDTYYADSVKGRFTISRDNKNTVYLQMNSLKPE DTAVYYCKRFRTAAQGTDYWGQGT LTVSSA
64	Compound of the invention	DVQLVESGGGVVQPGGSLRLSCAASGSTISSYVMGWFR RAPGKEREFVAAISRSGGYTTYADSVKGRFTISRDNKKT TAYLQMNSLRPEDTALYYCAAGRYSAWYSQSYEYDY WGQGT LTVSSGGGGSGGGGSGGGGSGGGGSGGGGSG GGGGSGGGGSEVQLVESGGGLVQAGGSLRLSCAASGIT FSINTMGWYRQAPGKQRELVALISSIGDTYYADSVKGR FTISRDNKNTVYLQMNSLKPEDTAVYYCKRFRTAAQ GTDYWGQGT LTVSSA

Figure 2 (continued)

SEQ ID NO	Description	Sequence
65	Compound of the invention	DVQLVESGGGLVQAGGSLRLSCAASGITFSINTMGWYR QAPGKQRELVALISSIGDTYYADSVKGRFTISRDNKNT VYLQMNSLKPEDTAVYYCKRFRTAAQGTDYWGQGT LTVSSGGGGSGGGGSGGGGSGGGGSGGGGSGGGGSGG GGSEVQLVESGGGLVQAGGSLRLSCAASGITFSINTMG WYRQAPGKQRELVALISSIGDTYYADSVKGRFTISRDN AKNTVYLQMNSLKPEDTAVYYCKRFRTAAQGTDYWG QGT LTVSSGGGGSGGGGSGGGGSGGGGSGGGGSGGG GGGGGGSEVQLVESGGGVVQPGGSLRLSCAASGSTISSY VMGWFRRAPGKEREFVAAISRSGGYTTYADSVKGRFTI SRDNSKKTAYLQMNSLRPEDTALYYCAAGRYSAWYSQ SYEYDYWGQGT LTVSSA
66	Compound of the invention	DVQLVESGGGLVQAGGSLRLSCAASGITFSINTMGWYR QAPGKQRELVALISSIGDTYYADSVKGRFTISRDNKNT VYLQMNSLKPEDTAVYYCKRFRTAAQGTDYWGQGT LTVSSGGGGSGGGGSGGGGSGGGGSGGGGSGGGGSGG GGSEVQLVESGGGVVQPGGSLRLSCAASGSTISSYVMG WFRRAPGKEREFVAAISRSGGYTTYADSVKGRFTISR DNSKKTAYLQMNSLRPEDTALYYCAAGRYSAWYSQSYE YDYWGQGT LTVSSGGGGSGGGGSGGGGSGGGGSGGG GGGGGGSGGGGSEVQLVESGGGLVQAGGSLRLSCAA SGITFSINTMGWYRQAPGKQRELVALISSIGDTYYADSV KGRFTISRDNKNTVYLQMNSLKPEDTAVYYCKRFRTA AQGTDYWGQGT LTVSSA
67	Compound of the invention	DVQLVESGGGVVQPGGSLRLSCAASGSTISSYVMGWFR RAPGKEREFVAAISRSGGYTTYADSVKGRFTISRDN SKKTAYLQMNSLRPEDTALYYCAAGRYSAWYSQSYEYD YWGQGT LTVSSGGGGSGGGGSGGGGSGGGGSGGGG GGGGSGGGGSEVQLVESGGGLVQAGGSLRLSCAASG ITFSINTMGWYRQAPGKQRELVALISSIGDTYYADSV KGRFTISRDNKNTVYLQMNSLKPEDTAVYYCKRFRTA AQGTDYWGQGT LTVSSA

Figure 2 (continued)

SEQ ID NO	Description	Sequence
68	Compound of the invention	DVQLVESGGGVVQPGGSLRLSCAASGRTFSSYAMGWF RQAPGKEREFVAAISWSDGSTYYADSVKGRFTISRDN KNTVYLQMNSLRPEDTALYYCAADLTSTNPGSYIYIWA YDYWGQGTLLTVSSGGGGSGGGGSGGGGSGGGGSGG GGSGGGGSGGGGSEVQLVESGGGVVQPGGSLRLSCAA SGRTFSSYAMGWFRQAPGKEREFVAAISWSDGSTYYAD SVKGRFTISRDNKNTVYLQMNSLRPEDTALYYCAADL TSTNPGSYIYIWAYDYWGQGTLLTVSSGGGGSGGGGSG GGGSGGGGSGGGGSGGGGSGGGGSEVQLVESGGGVVQ PGGSLRLSCAASGSTISSYVMGWFRRAPGKEREFVAAIS RSGGYTTYADSVKGRFTISRDN SKKTAYLQMNSLRPED TALYYCAAGRYS AWYSQSYEYDYWGQGTLLTVSS

Figure 3A

1	EVQLVESGGG	LVQPGNSLRL	SCAASGFTFS	SFGMSWVRQA	PGKGLEWVSS	ISGSGSDTLY	ADSVKGRFTI	SRDIAKTTLY	LQMNSLRPED	TAVYYCTIG-	-----SQGTLV	TVSS	115
2	L	G	R	P	P	S	N	S	E	AA	R	YDYWG	115
18	A	G	S	V	ER	F	AA	K	A	AA	R	YDYWG	124
19	V	G	S	V	ER	F	AA	K	A	L	AA	R	124
20	V	G	S	V	ER	F	AA	K	A	L	AA	R	124

Figure 3B

18	EVQLVESGGG	LVQAGGSLRL	SCAASGSNIS	SYVMGWFRRA	PGKEREFVAA	ISRSGGYTYY	ADSVKGRFTI	SRDIAKKTAY	LQMNSLEPED	TAVYYCAAGR	YSAWYSQSYE	YDWGQGTLV	TVSS	124
19	V	P	T	T	P	S	S	S	R	L	S	YDYWG	124	
20	V	P	T	T	P	S	S	S	R	L	S	YDYWG	124	
1	L	P	T	T	P	S	S	S	R	L	S	YDYWG	115	
2	L	P	T	T	P	S	S	S	R	L	S	YDYWG	115	

Figure 4

	20	40	60	80	100	120							
	EVQLVESGGG	LVQAGGSLRL	SCAASGSNIS	SYVMGWFRRA	PGKEREFVAA	ISRSGGYTY	ADSVKGRFTI	SRDNAKKTAY	LOMNSLEPED	TAVVYCAAGR	YSAWYSQSVE	YDYWGQGTLY	TVSS
18	V	P	T					S	R	L			-
19	V	P	T					S	R	L			-
20	V	P	T					S	R	L			-
21	V	P	T	Q				S	R	L			-
22	V	P	T					S	R	L			-
23	V	P	T					S	R	L			-
24	V	P	T	Q				S	R	L			-
25	V	P	T					S	R	L			-
26	V	P	T					S	R	L			-
27	V	P	T	Q				S	R	L			-
28	V	P	T					S	R	L			-
29	V	P	T	Q				S	R	L			-
30	V	P	T					S	R	L			-
31	V	P	T	Q				S	R	L			-
32	V	P	T					S	R	L			-
33	V	P	T					S	R	L			-
34	V	P	T					S	R	L			-
35	V	P	T	Q				S	R	L			-
36	V	P	T					S	R	L			-
37	V	P	T					S	R	L			-
38	V	P	T	Q				S	R	L			-
39	V	P	T	Q				S	R	L			-
40	V	P	T					S	R	L			-
41	V	P	T	Q				S	R	L			-
42	V	P	T					S	R	L			-
43	V	P	T	Q				S	R	L			-
44	V	P	T					S	R	L			-
45	V	P	T	Q				S	R	L			-
46	D							S	R	L			-
47	D		T					S	R	L			-
48	D							S	R	L			-
49	D		T					S	R	L			-
50	D							S	R	L			-
51	D		T					S	R	L			-
52	D		T					S	R	L			-
53	D		T					S	R	L			-
54	D		T					S	R	L			-
55	D		T					S	R	L			-
56	D		T					S	R	L			-
57	D		T					S	R	L			-
58	D		T					S	R	L			-
59	D		T					S	R	L			-

Figure 5

Mouse	MKWVTFLLLLLFVSGSAFSR---GVFRREA---HKSEIAHRYNDLGEQHFKGLVLIAFSQY	54
Rat	MKWVTFLLLLLFISGSAFSR---GVFRREA---HKSEIAHRFKDLGEQHFKGLVLIAFSQY	54
Dog	MKWVTFISLFFLFSSAYS---GLVRREA---YKSEIAHRYNDLGEEHFRGLVLVAFSQY	54
Cat	MKWVTFISLFFLFSSAYS---GVTRREA---HQSEIAHRFNDLGEEHFRGLVLVAFSQY	54
Human	MKWVTFISLFFLFSSAYS---GVFRDA---HKSEVAHRFKDLGEENFKALVLIAFAQY	54
Cow	MKWVTFISLFFLFSSAYS---GVFRRTD---HKSEIAHRFKDLGEEHFKGLVLIAFSQY	54
Sheep	MKWVTFISLFFLFSSAYS---GVFRRTD---HKSEIAHRFNDLGEENFQGLVLIAFSQY	54
Pig	MKWVTFISLFFLFSSAYS---GVFRRTD---YKSEIAHRFKDLGEQYFKGLVLIAFSQH	54
Horse	MKWVTFVSLFFLFSSAYS---GVLRRDT---HKSEIAHRFNDLGEKHFKGLVLVAFSQY	54
Rabbit	MKWVTFISLFFLFSSAYS---GVFRREA---HKSEIAHRFNDVGEEHFIGLVLITFSQY	54
Mouse	LQKCSYDEHAKLVQEVTDFAKTCVADESAANCDKSLHTLFGDKLCAIPNLRENYGELADC	114
Rat	LQKCPYEEHIKLVQEVTDFAKTCVADENAENCDKSIHTLFGDKLCAIPKLRDNYGELADC	114
Dog	LQQCPFEDHVKLAKEVTEFAKACAAEESGANCDKSLHTLFGDKLCTVASLRDKYGDMADC	114
Cat	LQQCPFEDHVKLVNEVTEFAKGCVAQSAANCEKSLHELLGDKLCTVASLRDKYGEADC	114
Human	LQQCPFEDHVKLVNEVTEFAKTCVADESAENCDKSLHTLFGDKLCTVATLRETYGEMADC	114
Cow	LQQCPFDEHVKLVNELTEFAKTCVADESHAGCEKSLHTLFGDELCKVASLRETYGDMADC	114
Sheep	LQQCPFDEHVKLVKELTEFAKTCVADESHAGCDKSLHTLFGDELCKVATLRETYGDMADC	114
Pig	LQQCPYEEHVKLVRVTEFAKTCVADESAENCDKSIHTLFGDKLCAIPSLREHYGDLADC	114
Horse	LQQCPFEDHVKLVNEVTEFAKKCAADESAENCDKSLHTLFGDKLCTVATLRATYGEADC	114
Rabbit	LQKCPYEEHAKLVKEVTDLAKACVADESAANCDKSLHDFGDKICALPSLRDYGDVADC	114
Mouse	CTKQEPERNECFHQKDDNPSLP-PFERPEAEAMCTSFKENPTTFMGHYLHEVARRHPYF	173
Rat	CAKQEPERNECFHQKDDNPNLP-PFQRPAAEAMCTSFQENPTSFGLHYLHEVARRHPYF	173
Dog	CEKQEPDRNECFQKDDNPGFP-PLVAPEPDALCAAFQDNEQLFLGKYLYEIAARRHPYF	173
Cat	CEKQEPERNECFHQKDDNPGFP-QLVTPEADAMCTAFHENEQRFLGKYLYEIAARRHPYF	173
Human	CAKQEPERNECFHQKDDNPNLP-RLVRPEVDVMCTAFHDNEETFLKKYLYEIAARRHPYF	173
Cow	CEKQEPERNECFSLHKDDSPDLP-CLK-PDPNTLCDEFKADEKKFWGKYLYEIAARRHPYF	172
Sheep	CEKQEPERNECFLNHKDDSPDLP-CLK-PEPDTLCAEFKADEKKFWGKYLYEIVARRHPYF	172
Pig	CEKEEPERNECFHQKDDNPDIP-CLK-PDPVALCADFQEDQKFWGKYLYEIAARRHPYF	172
Horse	CEKQEPERNECFTHKDDHNPDP-CLK-PEPDAQCAAFQEDPDKFLGKYLYEIVARRHPYF	172
Rabbit	CEKQEPERNECFLHKDDKPDLP-PFARPEADVLCKAFHDDEKAFFGHYLYEIVARRHPYF	173
Mouse	YAPELLYYAEQYNEILTQCCAEADKESCLTPKLDGVKEKALVSSVRQRMKCSSMQKFGER	233
Rat	YAPELLYYAEKYNEVLTQCCTESDKAACLTPKLDAVKEKALVAVRQRMKCSSMQRFGER	233
Dog	YAPELLYYAQQYKGVFAECCQAADKAACLGPKIEALREKVLSSAKERFKCASLQKFGER	233
Cat	YAPELLYYAEYKGVFTECCQAADKAACLTPKVDALREKVLASSAKERLKCASLQKFGER	233
Human	YAPELFFAKRYKAAFTECCQAADKAACLLPKLDELDEGKASSAKQRLKCASLQKFGER	233
Cow	YAPELLYYANKYNGVFQECQAEDKGACLLPKIETMREKVLTSARQRLRCASIQKFGER	232
Sheep	YAPELLYYANKYNGVFQECQAEDKGACLLPKIDAMREKVLASSARQRLRCASIQKFGER	232
Pig	YAPELLYYAIYKDVSECCQAADKAACLLPKIEHLREKVLTSAAQRLKCASIQKFGER	232
Horse	YGPPELLFHAEYKADFTECCPADDKLACLIPKLDALKERILLSSAKERLKCSSFQNFGER	232
Rabbit	YAPELLYYAKYKAILTECCQAADKGACLTPKLDALEGKSLISAAQERLRCASIQKFGER	233
Mouse	AFKAWAVARLSQTFPNADFAEITKLATDLTKVNKECCHGDLLCADDRAELAKYMCENQA	293
Rat	AFKAWAVARMSQRFPAEFAEITKLATDLTKINKECCHGDLLCADDRAELAKYMCENQA	293
Dog	AFKAWSVARLSQRFPAKADFAEISKVTDLTQVHKECCHGDLLCADDRAELAKYMCENQD	293
Cat	AFKAWSVARLSQKFPKAEFAEISKLVTDLTKVHKECCHGDLLCADDRAELAKYICENQD	293
Human	AFKAWAVARLSQRFPAEFAEVSKLVTDLTQVHTECCHGDLLCADDRAELAKYICENQD	293
Cow	ALKAWSVARLSQKFPKAEFVEVTKLVTDLTQVHKECCHGDLLCADDRAELAKYICDNQD	292
Sheep	ALKAWSVARLSQKFPKADFTEIVTDLTQVHKECCHGDLLCADDRAELAKYICDHQD	292
Pig	AFKAWSLARLSQRFPAKADFTEISKIVTDLTKVHKECCHGDLLCADDRAELAKYICENQD	292
Horse	AVKAWSVARLSQKFPKADFAEIVSKIVTDLTQVHKECCHGDLLCADDRAELAKYICEHQD	292
Rabbit	AYKAWALVRLSQRFPAKADFTEISKIVTDLTQVHKECCHGDLLCADDRAELAKYMCEHQE	293

Figure 5 (continued)

Mouse	TISSKLQTCDDKPLLKKAHCLSEVEHDTMPADLPAIAADFVEDQEVCKNYAEAKDVFLGT	353
Rat	TISSKLQACCDKPVLEKQSLAEIEHDNI PADLPSIAADFVEDKEVCKNYAEAKDVFLGT	353
Dog	SISTKLKECCDKPVLEKQSLAEVERDELPGDLPSLAADFVEDKEVCKNYQEAKDVFLGT	353
Cat	SISTKLKECCGKPVLEKSHCISEVERDEL PADLPP LAVDFVEDKEVCKNYQEAKDVFLGT	353
Human	SISSKLKECCEKPLLEKSHCIAEVENDEMPADLPSLAADFVESKDVCKNYAEAKDVFLGM	353
Cow	TISSKLKECCDKPLLEKSHCIAEVEKDAIPENLPPLTADFAEDKDVCKNYQEAKDAFLGS	352
Sheep	ALSSKLKECCDKPVLEKSHCIAEVDKDAVPENLPPLTADFAEDKEVCKNYQEAKDVFLGS	352
Pig	TISTKLKECCDKPLLEKSHCIAEAKRDEL PADLNP LEHDFVEDKEVCKNYKEAKHVFLGT	352
Horse	SISGKLKACCDKPLLQKSHCIAEVKEDDLPSDLPALAADFAEDKEICKHYKDAKDVFLGT	352
Rabbit	TISSHLKECCDKPILEKAHCIIYGLHNDET PAGLP AVAEFVEDKDVCKNYEEAKDLFLGK	353

Mouse	FLYEYSRRHPDYSVSLLLRLAKKYEATLEKCCAEANPPACYGTVLAEFQPLVEEPKNLVK	413
Rat	FLYEYSRRHPDYSVSLLLRLAKKYEATLEKCCAEGDPPACYGTVLAEFQPLVEEPKNLVK	413
Dog	FLYEYARRHPEYSVSLLLRLAKEYEATLEKCCATDDPPTCYAKVLDEFKPLVDEPQNLVK	413
Cat	FLYEYSRRHPEYSVSLLLRLAKEYEATLEKCCATDDPPACYAHVFDEFKPLVEEPHNLVK	413
Human	FLYEYARRHPDYSVLLLR LAKTYETTLEKCCAAADPHECYAKVFDEFKPLVEEPQNLIK	413
Cow	FLYEYSRRHPEYAVSVLLRLAKEYEATLEECCAKDDPHACYSTVFDKCLKHLVDEPQNLIK	412
Sheep	FLYEYSRRHPEYAVSVLLRLAKEYEATLEDCCAKEDPHACYATVFDKCLKHLVDEPQNLIK	412
Pig	FLYEYSRRHPDYSVSLLLRIAKIYEATLEDCCAKEDPPACYATVFDKQPLVDEPKNLIK	412
Horse	FLYEYSRRHPDYSVSLLLRIAKTYEATLEKCCAEADPPACYRTVFDQFTPLVEEPKSLVK	412
Rabbit	FLYEYSRRHPDYSVLLLR LGKAYEATLKKCCATDDPHACYAKVLDEFQPLVDEPKNLVK	413

Mouse	TNCDLYEKLGEYGFQNAILLVRYTQKAPQVSTPTLVEAARNLGRVGTKCCTLPEDQRLPCV	473
Rat	TNCELYEKLGEYGFQNAILLVRYTQKAPQVSTPTLVEAARNLGRVGTKCCTLPEAQRLPCV	473
Dog	TNCELFEKLGEYGFQNAILLVRYTKKAPQVSTPTLVEVSRKLGKVGTKCCKKPESERMSCA	473
Cat	TNCELFEKLGEYGFQNAILLVRYTKKVPQVSTPTLVEVSRSLGKVGSKCCTHPEAERLSCA	473
Human	QNCLEFEQLGEYKFQNAILLVRYTKKVPQVSTPTLVEVSRNLGKVGSKCCKHPEAKRMPCA	473
Cow	QNCDDQFEKLGEYGFQNALIVRYTRKVPQVSTPTLVEVSRSLGKVGTRCCTKPESERMPCT	472
Sheep	KNCELFEKHGEYGFQNALIVRYTRKAPQVSTPTLVEISRSLGKVGTKCCAKPESERMPCT	472
Pig	QNCLEFEKLGEYGFQNALIVRYTKKVPQVSTPTLVEVARKLGLVGSRCCKRPEERLSCA	472
Horse	KNCDLFEEVGEYDFQNALIVRYTKKAPQVSTPTLVEIGRTLKGKVGSRCCCKLPESERLPCS	472
Rabbit	QNCLELYEQLGDYNFQNAILLVRYTKKVPQVSTPTLVEISRSLGKVGSKCCKHPEAERLPCV	473

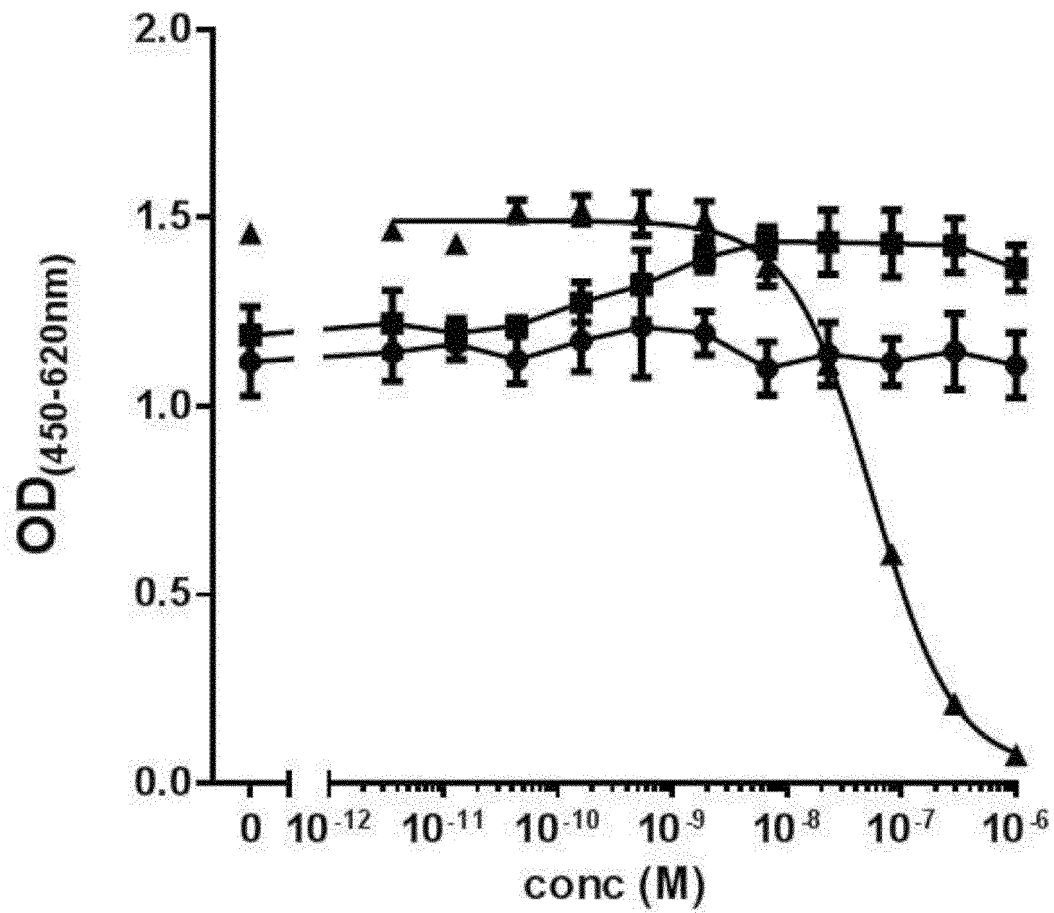
Mouse	EDYLSAILNRVCLLHEKTPVSEHVTKCCSGSLVERRPCFSALTVDETYVPKEFKAETFTF	533
Rat	EDYLSAILNRLCVLHEKTPVSEKVTKCCSGSLVERRPCFSALTVDETYVPKEFKAETFTF	533
Dog	EDFLSVVLNRLCVLHEKTPVSEKVTKCCSESLVNRRCFSGLVDETYVPKEFNAETFTF	533
Cat	EDYLSVVLNRLCVLHEKTPVSEKVTKCTESLVNRRCFSALQVDETYVPKEFSAETFTF	533
Human	EDYLSVVLNQ LCVLHEKTPVSDRVTKCTESLVNRRCFSALQVDETYVPKEFNAETFTF	533
Cow	EDYLSLILNRLCVLHEKTPVSEKVTKCTESLVNRRCFSALTPDETYVPKAFDEKLFTF	532
Sheep	EDYLSLILNRLCVLHEKTPVSEKVTKCTESLVNRRCFSDLTLDETYVPKPFDEKFFTF	532
Pig	EDYLSLVLNRLCVLHEKTPVSEKVTKCTESLVNRRCFSALTPDETYKPKFEVVEGTF	532
Horse	ENHLALALNRLCVLHEKTPVSEKITKCTDSLAEERRPCFSALDELDEGYVPKEFKAETFTF	532
Rabbit	EDYLSVVLNRLCVLHEKTPVSEKVTKCCSESLVDRRCFSALGPDETYVPKEFNAETFTF	533

Mouse	HSDICTLPKEKQIKKQTALAEVLKHKPKATAEQ LKTV MDDFAQFLDTCCKAADKDT CFS	593
Rat	HSDICTLPDKEKQIKKQTALAEVLKHKPKATEDQLKTVMGDFAQFVDKCKAADKDNCFA	593
Dog	HADLCTLP EAEKQIKKQTALVELLKHKPKATDEQLKTVMGDFGAFVEKCCAAENKEGCFS	593
Cat	HADLCTLP EAEKQIKKQSALVELLKHKPKATTEEQLKTVMGDFGSFVDKCCAAEDKEACFA	593
Human	HADICTLSEKERQIKKQTALVELVHKHKPKATKEQLKAVMDDFAAFVEKCKADDKETCFA	593
Cow	HADICTLPDTEKQIKKQTALVELLKHKPKATTEEQLKTVMENFVAFVDKCCAAEDKEACFA	592
Sheep	HADICTLPDTEKQIKKQTALVELLKHKPKATDEQLKTVMENFVAFVDKCCAAEDKEGCFV	592
Pig	HADLCTLP EDEKQIKKQTALVELLKHKPHATEEQ LRTVLGNFAAFVQKCCAAPDHEACFA	592
Horse	HADICTLP EDEKQIKKQSALAEVLKHKPKATKEQLKTVLGNFSAFVAKCCGREDKEACFA	592
Rabbit	HADICTLPETERKIKKQTALVELVHKHKPHATNDQLKTVVGFTALLDKCCSAEDKEACFA	593

Figure 5 (continued)

Mouse	TEGPNLVTRCKDTLA---	608
Rat	TEGPNLVARSKEALA---	608
Dog	EEGPKLVAAAQAALV---	608
Cat	EEGPKLVAAAQAALA---	608
Human	EEGKKLVAASQAALGL--	609
Cow	VEGPKLVVSTQTALA---	607
Sheep	LEGPKLVASTQAALA---	607
Pig	VEGPKFVIEIRGILA---	607
Horse	EEGPKLVASSQLALA---	607
Rabbit	VEGPKLVESSKATLG---	608

Figure 6



- ▲ = His6Flag3-SEQ ID NO:1
■ = Flag3His6- SEQ ID NO:20
● = cAblys3-Flag3His6

Figure 7

