

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

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          10          20          30          40
-----:-----|-----:-----|-----:-----|-----:-----|

SEQ ID NO: 58      QVQLVESGGGLVQAGGSLRLSCTASGQTSSTADMGWFRQP
SEQ ID NO: 1       E.....P.....F.F.....A
SEQ ID NO: 59      E.....V..P.....F.F.....A

          50          60          70          80
-----:-----|---a---:-----|-----:-----|-----:-----|

SEQ ID NO: 58      PGKGREFVARISGIDGTTYDEPVKGRFTISRDKAQNTVYL
SEQ ID NO: 1       .....S.....N.K..L..
SEQ ID NO: 59      .....S.....N.K..L..

          90          100          110
--abc--:-----|-----:-----|abcd-----:-----|-----

SEQ ID NO: 58      QMDSLKPEDTAVYYCRSPRYADQWSAYDYWGQGTQVTVSS-
SEQ ID NO: 1       ..N..R.....L.....-
SEQ ID NO: 59      ..N..R.....L.....-

```

Figure 3

SEQ ID NO	Description	Sequence
1	reference A:	EVQLVESGGGLVQPGGSLRLSCTASGFTFSTADMGWFRQAPGKGREFVSRI SGIDGTTYDEPVKGRFTISRDNANTLYLQMNSLRPEDTAVYYCRSPRYA DQWSAYDYWGQGTLLTVSS
2	CDR1 (Kabat)	TADMG
3	CDR2 (Kabat)	RISGIDGTTYDEPVKG
4	CDR3 (Kabat/Abm)	PRYADQWSAYDY
5	CDR1 (Abm)	GFTFSTADMG
6	CDR2 (Abm)	RISGIDGTTY
7	CDR3 (Kabat/Abm)	PRYADQWSAYDY
8	Reference A (89T)	EVQLVESGGGLVQPGGSLRLSCTASGFTFSTADMGWFRQAPGKGREFVSRI SGIDGTTYDEPVKGRFTISRDNANTLYLQMNSLRPEDTATYYCRSPRYA DQWSAYDYWGQGTLLTVSS
9	Reference A (11V + 110K)	EVQLVESGGGVVQPGGSLRLSCTASGFTFSTADMGWFRQAPGKGREFVSRI SGIDGTTYDEPVKGRFTISRDNANTLYLQMNSLRPEDTAVYYCRSPRYA DQWSAYDYWGQGTLLVKVSS
10	Reference A (11V + 110Q)	EVQLVESGGGVVQPGGSLRLSCTASGFTFSTADMGWFRQAPGKGREFVSRI SGIDGTTYDEPVKGRFTISRDNANTLYLQMNSLRPEDTAVYYCRSPRYA DQWSAYDYWGQGTLLVQVSS
11	Reference A (11V + 112K)	EVQLVESGGGVVQPGGSLRLSCTASGFTFSTADMGWFRQAPGKGREFVSRI SGIDGTTYDEPVKGRFTISRDNANTLYLQMNSLRPEDTAVYYCRSPRYA DQWSAYDYWGQGTLLTVKS
12	Reference A (11V + 112Q)	EVQLVESGGGVVQPGGSLRLSCTASGFTFSTADMGWFRQAPGKGREFVSRI SGIDGTTYDEPVKGRFTISRDNANTLYLQMNSLRPEDTAVYYCRSPRYA DQWSAYDYWGQGTLLTVQS

Figure 3 (continued)

SEQ ID NO	Description	Sequence
13	Reference A (89L + 110K)	EVQLVESGGGLVQPGGSLRLSCTASGFTTFSTADMGWFRQAPGKGRE FVSRISGIDGTTYDEPVKGRFTISRDNAKNTLYLQMNSLRPEDTA L YYCRSPRYADQWSAYDYWGQGTLLVKVSS
14	Reference A (89L + 110Q)	EVQLVESGGGLVQPGGSLRLSCTASGFTTFSTADMGWFRQAPGKGRE FVSRISGIDGTTYDEPVKGRFTISRDNAKNTLYLQMNSLRPEDTA L YYCRSPRYADQWSAYDYWGQGTLLVQVSS
15	Reference A (89L + 112K)	EVQLVESGGGLVQPGGSLRLSCTASGFTTFSTADMGWFRQAPGKGRE FVSRISGIDGTTYDEPVKGRFTISRDNAKNTLYLQMNSLRPEDTA L YYCRSPRYADQWSAYDYWGQGTLLVTVKS
16	Reference A (89L + 112Q)	EVQLVESGGGLVQPGGSLRLSCTASGFTTFSTADMGWFRQAPGKGRE FVSRISGIDGTTYDEPVKGRFTISRDNAKNTLYLQMNSLRPEDTA L YYCRSPRYADQWSAYDYWGQGTLLVTVQS
17	Reference A (11V + 89L)	EVQLVESGGGVVQPGGSLRLSCTASGFTTFSTADMGWFRQAPGKGRE FVSRISGIDGTTYDEPVKGRFTISRDNAKNTLYLQMNSLRPEDTA L YYCRSPRYADQWSAYDYWGQGTLLVTVSS
18	Reference A (11V + 89L + 110K)	EVQLVESGGGVVQPGGSLRLSCTASGFTTFSTADMGWFRQAPGKGRE FVSRISGIDGTTYDEPVKGRFTISRDNAKNTLYLQMNSLRPEDTA L YYCRSPRYADQWSAYDYWGQGTLLVKVSS
19	Reference A (11V + 89L + 110Q)	EVQLVESGGGVVQPGGSLRLSCTASGFTTFSTADMGWFRQAPGKGRE FVSRISGIDGTTYDEPVKGRFTISRDNAKNTLYLQMNSLRPEDTA L YYCRSPRYADQWSAYDYWGQGTLLVQVSS
20	Reference A (11V + 89L + 112K)	EVQLVESGGGVVQPGGSLRLSCTASGFTTFSTADMGWFRQAPGKGRE FVSRISGIDGTTYDEPVKGRFTISRDNAKNTLYLQMNSLRPEDTA L YYCRSPRYADQWSAYDYWGQGTLLVTVKS

Figure 3 (continued)

SEQ ID NO	Description	Sequence
21	Reference A (11V + 89L + 112Q)	EVQLVESGGGVVQPGGSLRLSCTASGFTFSTADMGWFRQAPGKGRE FVSRISGIDGTTYDEPVKGRFTISRDNAKNTLYLQMNSLRPEDTA LYYCRSPRYADQWSAYDYWGQGTLLVTVQS
22	Reference A (89T)+ A	EVQLVESGGGLVQPGGSLRLSCTASGFTFSTADMGWFRQAPGKGRE FVSRISGIDGTTYDEPVKGRFTISRDNAKNTLYLQMNSLRPEDTA TYYCRSPRYADQWSAYDYWGQGTLLVTVSSA
23	Reference A (11V + 110K)+ A	EVQLVESGGGVVQPGGSLRLSCTASGFTFSTADMGWFRQAPGKGRE FVSRISGIDGTTYDEPVKGRFTISRDNAKNTLYLQMNSLRPEDTA VYYCRSPRYADQWSAYDYWGQGTLLVKVSSA
24	Reference A (11V + 110Q)+ A	EVQLVESGGGVVQPGGSLRLSCTASGFTFSTADMGWFRQAPGKGRE FVSRISGIDGTTYDEPVKGRFTISRDNAKNTLYLQMNSLRPEDTA VYYCRSPRYADQWSAYDYWGQGTLLVQVSSA
25	Reference A (11V + 112K)+ A	EVQLVESGGGVVQPGGSLRLSCTASGFTFSTADMGWFRQAPGKGRE FVSRISGIDGTTYDEPVKGRFTISRDNAKNTLYLQMNSLRPEDTA VYYCRSPRYADQWSAYDYWGQGTLLVTVKSA
26	Reference A (11V + 112Q)+ A	EVQLVESGGGVVQPGGSLRLSCTASGFTFSTADMGWFRQAPGKGRE FVSRISGIDGTTYDEPVKGRFTISRDNAKNTLYLQMNSLRPEDTA VYYCRSPRYADQWSAYDYWGQGTLLVTVQSA
27	Reference A (89L + 110K)+ A	EVQLVESGGGLVQPGGSLRLSCTASGFTFSTADMGWFRQAPGKGRE FVSRISGIDGTTYDEPVKGRFTISRDNAKNTLYLQMNSLRPEDTA LYYCRSPRYADQWSAYDYWGQGTLLVKVSSA
28	Reference A (89L + 110Q)+ A	EVQLVESGGGLVQPGGSLRLSCTASGFTFSTADMGWFRQAPGKGRE FVSRISGIDGTTYDEPVKGRFTISRDNAKNTLYLQMNSLRPEDTA LYYCRSPRYADQWSAYDYWGQGTLLVQVSSA

Figure 3 (continued)

SEQ ID NO	Description	Sequence
29	Reference A (89L + 112K)+A	EVQLVESGGGLVQPGGSLRLSCTASGFTFSTADMGWFRQAPGKGRE FVSRISGIDGTTYDEPVKGRFTISRDNKNTLYLQMNSLRPEDTA LYYCRSPRYADQWSAYDYWGQGTLLVTVKSA
30	Reference A (89L + 112Q)+A	EVQLVESGGGLVQPGGSLRLSCTASGFTFSTADMGWFRQAPGKGRE FVSRISGIDGTTYDEPVKGRFTISRDNKNTLYLQMNSLRPEDTA LYYCRSPRYADQWSAYDYWGQGTLLVTVQSA
31	Reference A (11V + 89L)+ A	EVQLVESGGGVVQPGGSLRLSCTASGFTFSTADMGWFRQAPGKGRE FVSRISGIDGTTYDEPVKGRFTISRDNKNTLYLQMNSLRPEDTA LYYCRSPRYADQWSAYDYWGQGTLLVTVSSA
32	Reference A (11V + 89L + 110K)+ A	EVQLVESGGGVVQPGGSLRLSCTASGFTFSTADMGWFRQAPGKGRE FVSRISGIDGTTYDEPVKGRFTISRDNKNTLYLQMNSLRPEDTA LYYCRSPRYADQWSAYDYWGQGTLLVKVSSA
33	Reference A (11V + 89L + 110Q)+ A	EVQLVESGGGVVQPGGSLRLSCTASGFTFSTADMGWFRQAPGKGRE FVSRISGIDGTTYDEPVKGRFTISRDNKNTLYLQMNSLRPEDTA LYYCRSPRYADQWSAYDYWGQGTLLVQVSSA
34	Reference A (11V + 89L + 112K)+A	EVQLVESGGGVVQPGGSLRLSCTASGFTFSTADMGWFRQAPGKGRE FVSRISGIDGTTYDEPVKGRFTISRDNKNTLYLQMNSLRPEDTA LYYCRSPRYADQWSAYDYWGQGTLLVTVKSA
35	Reference A (11V + 89L + 112Q)+A	EVQLVESGGGVVQPGGSLRLSCTASGFTFSTADMGWFRQAPGKGRE FVSRISGIDGTTYDEPVKGRFTISRDNKNTLYLQMNSLRPEDTA LYYCRSPRYADQWSAYDYWGQGTLLVTVQSA
36	TNF binder of the invention (00016)	DVQLVESGGGVVQPGGSLRLSCTASGFTFSTADMGWFRQAPGKGRE FVARISGIDGTTYDEPVKGRFTISRDNKNTLYLQMNSLRPEDTA LYYCRSPRYADQWSAYDYWGQGTLLVTVSSA
37	TNF binder of the invention (00018)	DVQLVESGGGVVQPGGSLRLSCTASGFTFSTADMGWFRQAPGKGRE FVSRISGIDGTTYDEPVKGRFTISRDNKNTLYLQMNSLRPEDTA LYYCRSPRYADQWSAYDYWGQGTLLVTVSSA

Figure 3 (continued)

SEQ ID NO	Description	Sequence
38	TNF binder of the invention (00019)	DVQLVESGGGVVQPGGSLRLSCTASGFTFSTADMGWFRQAPGKGRE FVSRISGIDGTTYDEPVKGRFTISRDN SKNTVYLQMN SLRPEDTA L YYCRSPRYADQWSAYDYWGQGT LVTVSSA
39	TNF binder of the invention (00020)	DVQLVESGGGVVQPGGSLRLSCTASGFTFSTADMGWFRQAPGKGRE FVARISGIDGTTYADSVKGRFTISRDN SKNTVYLQMN SLRPEDTA L YYCRSPRYADQWSAYDYWGQGT LVTVSSA
40	TNF binder of the invention (00021)	DVQLVESGGGVVQPGGSLRLSCTASGFTFSTADMGWFRQAPGKGRE FVARISGIDGTTYDEPVKGRFTISRDN SKNTVYLQMN SLRPEDTA L YYCRSPRYADQWSAYDYWGQGT LVTVSSA
41	TNF binder of the invention (00030)	DVQLVESGGGVVQPGGSLRLSCTASGFTFSTADMGWFRQAPGKGRE FVSRISGIDGTTYDEPVKGRFTISRDN AKNTLYLQMN SLRPEDTA L YYCRSPRYADQWSAYDYWGQGT LVTVSSA
42	HIS6-FLAG3 tag	HHHHHHGAADYKDHDGDYKDHDIDYKDDDDKGAA
43	C-terminal end	VTVKS
44	C-terminal end	VTVQS
45	C-terminal end	VKVSS
46	C-terminal end	VQVSS
47	C-terminal end	VTVK SX (n)
48	C-terminal end	VTVQ SX (n)
49	C-terminal end	VKV SSX (n)
50	C-terminal end	VQV SSX (n)
51	C-terminal end	VTVKSA
52	C-terminal end	VTVQSA
53	C-terminal end	VKVSSA
54	C-terminal end	VQVSSA
55	C-terminal end	VTVSS
56	C-terminal end	VTVSSX _(n)
57	C-terminal end	VTVSSA
58	NC55TNF-NC7 (PMP6C11) WO2006/122786: SEQ ID NO: 125	QVQLVESGGGLVQAGGSLRLSCTASGQTSSTADMGWFRQPPGKGRE FVARISGIDGTTYDEPVKGRFTISRDKAQNTVYLQMDSLKPEDTA VYYCRSPRYADQWSAYDYWGQGTQVTVSS
59	WO2015/173325 seq id NO: 345	EVQLVESGGGVVQPGGSLRLSCTASGFTFSTADMGWFRQAPGKGRE FVSRISGIDGTTYDEPVKGRFTISRDN AKNTLYLQMN SLRPEDTA L YYCRSPRYADQWSAYDYWGQGT LVTVSS

Figure 3 (continued)

60	TNF200	DVQLVESGGGLVQPGGSLRLSCTASGFTFSTADMGWFRQAPGKGRE FVSRISGIDGTTYDEPVKGRFTISRDNKNTLYLQMNSLRPEDTA VYYCRSPRYADQWSAYDYWGQGTLLVTVSS
61	A016600015 (TNF200A)	DVQLVESGGGLVQPGGSLRLSCTASGFTFSTADMGWFRQAPGKGRE FVSRISGIDGTTYDEPVKGRFTISRDNKNTLYLQMNSLRPEDTA VYYCRSPRYADQWSAYDYWGQGTLLVTVSSA
62	A016600046 100dL (00046)	DVQLVESGGGVVQPGGSLRLSCTASGFTFSTADMGWFRQAPGKGRE FVARISGIDGTTYDEPVKGRFTISRDNKNTVYLYQMNSLRPEDTA LYYCRSPRYADQWSALDYWGQGTLLVTVSSA
63	A016600052 (49C-69C + 100dL (00052)	DVQLVESGGGVVQPGGSLRLSCTASGFTFSTADMGWFRQAPGKGRE FVCRISGIDGTTYDEPVKGRFTCSRDNKNTVYLYQMNSLRPEDTA LYYCRSPRYADQWSALDYWGQGTLLVTVSSA
64	A016600038 (00038)	DVQLVESGGGVVQPGGSLRLSCTASGFTFSTADMGWFRQAPGKGRE FVARISGIDGTTYDEPVKGRFTISRDNKNTVYLYQMNSLRPEDTA LYYCRSPRYADQWSAYDYWGQGTLLVTVSSA
65	A016600013 (00013)	EVQLVESGGGLVQPGGSLRLSCTASGFTFSTADMGWFLQAPGKGRE FVSRISGIDGTTYDEPVQGRFTISRDNKNTLYLQMNSLRPEDTA VYYCRPSQYADQWSAYDYWGQGTLLVTVSS
66	A016600014 (00014)	EVQLVESGGGLVQPGGSLRLSCTASGFTFSTADMGWFRQAPGKGRE FVSRISGIDGTTYDEPVQGRFTISRDNKNTLYLQMNSLRPEDTA VYYCRPSQYADQWSAYDYWGQGTLLVTVSS
67	A016600040 (00040)	QVQLVESGGGLVQAGGSLRLSCTASGQTSSTADMGWFRQPPGKGRE FVARISGIDGTTYDEPVKGRFTISRDKAQNVTYLYQMDSLKPEDTA VYYCRSPRYADQWSAYDYWGQGTQVTVSS
68	A016600039 (00039)	QVQLVESGGGLVQAGGSLRLSCTASGQTSSTADMGWFRQPPGKGRE FVARISGIDGTTYDEPVKGRFTISRDKSQNTVYLYQMDSLKPEDTA VYYCRSPRYADQWSAYDYWGQGTQVTVSS
69	A016600045 (00045)	DVQLVESGGGVVQPGGSLRLSCTASGFTFSTADMGWFRQAPGKGRE FVARISGIDGTTYDEPVKGRFTISRDNKNTVYLYQMNSLRPEDTA LYYCRSPRYADQWSAHDYWGQGTLLVTVSSA

Figure 4

			20		40		60	
SEQIDNO:1	EVQLVESGGG	LVQPGGSLRL	SCTASGFTFS	TADMGWFROA	PGKGRFVSR	ISGIDGTTY	60	
SEQIDNO:8							60	
SEQIDNO:9		V					60	
SEQIDNO:11		V					60	
SEQIDNO:10		V					60	
SEQIDNO:12		V					60	
SEQIDNO:13							60	
SEQIDNO:14							60	
SEQIDNO:15							60	
SEQIDNO:16							60	
SEQIDNO:17		V					60	
SEQIDNO:18		V					60	
SEQIDNO:19		V					60	
SEQIDNO:20		V					60	
SEQIDNO:21		V					60	
SEQIDNO:22							60	
SEQIDNO:23		V					60	
SEQIDNO:24		V					60	
SEQIDNO:25		V					60	
SEQIDNO:26		V					60	
SEQIDNO:27							60	
SEQIDNO:28							60	
SEQIDNO:29							60	
SEQIDNO:30							60	
SEQIDNO:31		V					60	
SEQIDNO:32		V					60	
SEQIDNO:33		V					60	
SEQIDNO:34		V					60	
SEQIDNO:35		V					60	
SEQIDNO:36	D	V			A		60	
SEQIDNO:37	D	V					60	
SEQIDNO:38	D	V					60	
SEQIDNO:39	D	V			A		60	
SEQIDNO:40	D	V			A		60	
SEQIDNO:41	D	V					60	
SEQIDNO:58	Q	A	Q S	P	A		60	
			80		100		120	
SEQIDNO:1	DEPVKGRFTI	SRDNAKNTLY	LQMNSLRPED	TAVYYCRSPR	YADQWSAYDY	WGQGTLLTVTS	120	
SEQIDNO:8				T			120	
SEQIDNO:9					K		120	
SEQIDNO:11					K		120	
SEQIDNO:10					Q		120	
SEQIDNO:12					Q		120	
SEQIDNO:13				L	K		120	
SEQIDNO:14				L	Q		120	
SEQIDNO:15				L	K		120	
SEQIDNO:16				L	Q		120	
SEQIDNO:17				L			120	
SEQIDNO:18				L	K		120	
SEQIDNO:19				L	Q		120	
SEQIDNO:20				L	K		120	
SEQIDNO:21				L	Q		120	
SEQIDNO:22				T			120	
SEQIDNO:23					K		120	
SEQIDNO:24					Q		120	
SEQIDNO:25					K		120	
SEQIDNO:26					Q		120	
SEQIDNO:27				L	K		120	
SEQIDNO:28				L	Q		120	
SEQIDNO:29				L	K		120	
SEQIDNO:30				L	Q		120	
SEQIDNO:31				L			120	
SEQIDNO:32				L	K		120	
SEQIDNO:33				L	Q		120	
SEQIDNO:34				L	K		120	
SEQIDNO:35				L	Q		120	
SEQIDNO:36		S		L			120	
SEQIDNO:37		S		L			120	
SEQIDNO:38		S	V	L			120	
SEQIDNO:39	ADS	S	V	L			120	
SEQIDNO:40		S	V	L			120	
SEQIDNO:41				L			120	
SEQIDNO:58		K Q V	D K		Q		120	

Figure 4 (continued)

SEQIDNO:1	S	-	121
SEQIDNO:8	.	-	121
SEQIDNO:9	.	-	121
SEQIDNO:11	.	-	121
SEQIDNO:10	.	-	121
SEQIDNO:12	.	-	121
SEQIDNO:13	.	-	121
SEQIDNO:14	.	-	121
SEQIDNO:15	.	-	121
SEQIDNO:16	.	-	121
SEQIDNO:17	.	-	121
SEQIDNO:18	.	-	121
SEQIDNO:19	.	-	121
SEQIDNO:20	.	-	121
SEQIDNO:21	.	-	121
SEQIDNO:22	A	122	
SEQIDNO:23	A	122	
SEQIDNO:24	A	122	
SEQIDNO:25	A	122	
SEQIDNO:26	A	122	
SEQIDNO:27	A	122	
SEQIDNO:28	A	122	
SEQIDNO:29	A	122	
SEQIDNO:30	A	122	
SEQIDNO:31	A	122	
SEQIDNO:32	A	122	
SEQIDNO:33	A	122	
SEQIDNO:34	A	122	
SEQIDNO:35	A	122	
SEQIDNO:36	A	122	
SEQIDNO:37	A	122	
SEQIDNO:38	A	122	
SEQIDNO:39	A	122	
SEQIDNO:40	A	122	
SEQIDNO:41	A	122	
SEQIDNO:58	.	-	121

Figure 5

		20		40		60	
SEQIDNO:31	EVQLVESGGG	VVQPGGSLRL	SCTASGFTFS	TADMGWFRQA	PGKGREFVSR	ISGIDGTTY	60
SEQIDNO:36	D				A		60
SEQIDNO:37	D						60
SEQIDNO:38	D						60
SEQIDNO:39	D				A		60
SEQIDNO:40	D				A		60
SEQIDNO:41	D						60
SEQIDNO:1		L					60
		80		100		120	
SEQIDNO:31	DEPVKGRFTI	SRDNAKNTLY	LQMNSLRPED	TALYYCRSPR	YADQWSAYDY	WGQGTLLTVS	120
SEQIDNO:36		S					120
SEQIDNO:37		S					120
SEQIDNO:38		S	V				120
SEQIDNO:39	ADS	S	V				120
SEQIDNO:40		S	V				120
SEQIDNO:41							120
SEQIDNO:1				V			120
SEQIDNO:31	SA	122					
SEQIDNO:36		122					
SEQIDNO:37		122					
SEQIDNO:38		122					
SEQIDNO:39		122					
SEQIDNO:40		122					
SEQIDNO:41		122					
SEQIDNO:1		121					

11/21

Figure 6

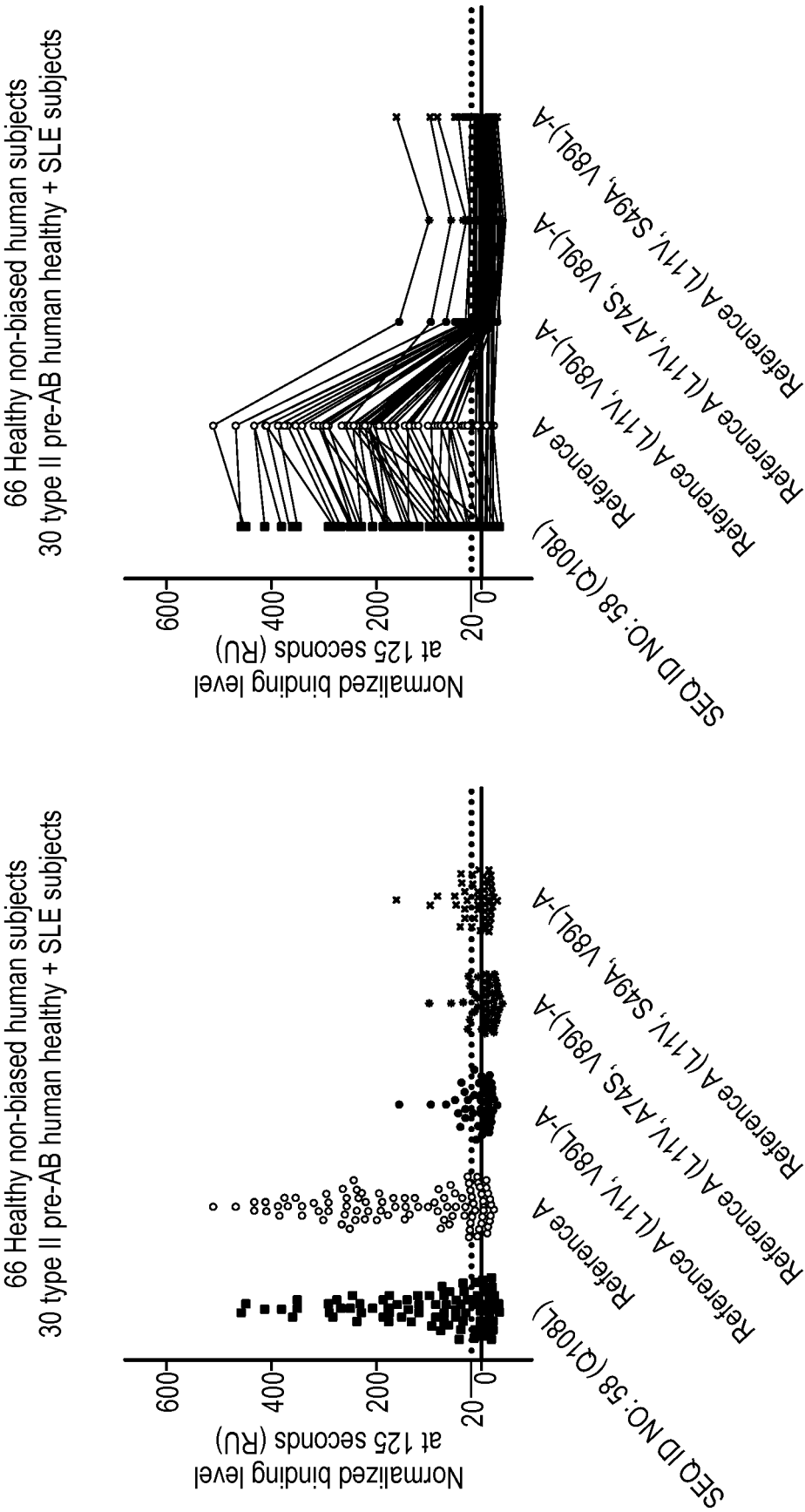


Figure 7

Sample	Normalized PreAb binding levels (RU at 125 s)					% Reduction PreAb binding compared to Reference A			
	SEQ ID NO:58 (Q108L)	Referen ce A	Referen ce A (L11V, V89L)	Referen ce A (L11V, A74S, V89L)	Referen ce A (L11V, S49A, V89L)	SEQ ID NO:58 (Q108L)	Referen ce A (L11V, V89L)	Referen ce A (L11V, A74S, V89L)	Referen ce A (L11V, S49A, V89L)
IHuS#ABL-0042-02	-15	-11	-20	-23	-15				
IHuS#ABL-0088-03	118	200	3	-3	12	41	99	100	94
IHuS#ABL-0137-01	-17	8	-16	-22	-14				
IHuS#ABL-0138-01	-11	19	-14	-17	-17				
IHuS#ABL-0139-01	0	37	-9	-12	-11	100	100	100	100
IHuS#ABL-0141-01	-17	-2	-15	-15	-10				
IHuS#ABL-0149-01	34	121	14	-10	32	71	88	100	73
IHuS#ABL-0150-01	11	17	-20	-19	-13				
IHuS#ABL-0151-01	38	126	-10	-16	-6	70	100	100	100
IHuS#ABL-0152-01	-2	50	-10	-12	-11	100	100	100	100
IHuS#ABL-0153-01	61	145	-16	-23	-15	58	100	100	100
IHuS#ABL-0154-01	-32	-19	-29	-31	-25				
IHuS#ABL-0159-01	-24	-5	-28	-34	-23				
IHuS#ABL-0160-01	-15	-12	-22	-19	-12				
IHuS#ABL-0161-01	-17	-5	-11	-18	-8				
IHuS#ABL-0162-01	-15	-10	-13	-17	-17				
IHuS#ABL-0148-01	290	369	-8	-13	-10	21	100	100	100
IHuS#ABL-0163-01	236	310	4	-6	5	24	99	100	98
IHuS#ABL-0171-01	-17	-8	-21	-24	-18				
IHuS#ABL-0172-01	47	48	-18	-17	-11	0	100	100	100

Figure 7 (continued)

Sample	SEQ ID NO:58 (Q108L)	Referen ce A	Referen ce A (L11V, V89L)	Referen ce A (L11V, A74S, V89L)	Referen ce A (L11V, S49A, V89L)	SEQ ID NO:58 (Q108L)	Referen ce A (L11V, V89L)	Referen ce A (L11V, A74S, V89L)	Referen ce A (L11V, S49A, V89L)
IHuS#ABL-0218-01	63	72	-12	-15	-9	13	100	100	100
IHuS#ABL-0040-03	284	342	1	-11	-7	17	100	100	100
IHuS#ABL-0090-02	413	433	25	-3	31	5	94	100	93
IHuS#ABL-0173-01	186	229	-14	-16	-13	19	100	100	100
IHuS#ABL-0188-01	-14	-8	-21	-23	-16				
IHuS#ABL-0006-02	458	468	66	34	84	2	86	93	82
IHuS#ABL-0189-01	-12	-1	-10	-13	-6				
IHuS#ABL-0190-01	-11	-3	-11	-13	-16				
IHuS#ABL-0191-01	-21	-13	-17	-19	-20				
IHuS#ABL-0192-01	-14	3	-20	-17	-15				
IHuS#ABL-0198-01	-3	8	-17	-20	-13				
IHuS#ABL-0165-01	206	240	-20	-21	-13	14	100	100	100
IHuS#ABL-0199-01	229	250	15	5	16	8	94	98	94
IHuS#ABL-0200-01	-12	12	-11	-12	-14				
IHuS#ABL-0201-01	11	30	-2	-9	-1	63	100	100	100
IHuS#ABL-0202-01	29	90	-13	-17	-9	67	100	100	100
IHuS#ABL-0044-02	-25	-23	-26	-28	-22				
IHuS#ABL-0209-01	-9	18	-15	-15	-8				
IHuS#ABL-0210-01	-10	3	-11	-13	-8				
IHuS#ABL-0211-01	2	31	-11	-13	-14	92	100	100	100
IHuS#ABL-0212-01	47	137	4	-5	5	66	97	100	97
IHuS#ABL-0213-01	-14	0	-14	-13	-11				

Figure 7 (continued)

Sample	SEQ ID NO:58 (Q108L)	Referen ce A	Referen ce A (L11V, V89L)	Referen ce A (L11V, A74S, V89L)	Referen ce A (L11V, S49A, V89L)	SEQ ID NO:58 (Q108L)	Referen ce A (L11V, V89L)	Referen ce A (L11V, A74S, V89L)	Referen ce A (L11V, S49A, V89L)
IHuS#ABL-0183-01	290	353	13	-1	17	18	96	100	95
IHuS#ABL-0005-06	-18	-16	-21	-20	-16				
IHuS#ABL-0219-01	-3	7	-12	-14	-8				
IHuS#ABL-0221-01	-2	19	-20	-23	-24				
IHuS#ABL-0222-01	140	144	-11	-13	-12	3	100	100	100
IHuS#ABL-0223-01	177	267	-31	-36	-27	34	100	100	100
IHuS#ABL-0142-01	-2	25	-22	-23	-15	100	100	100	100
IHuS#ABL-0143-01	12	14	-17	-14	-7				
IHuS#ABL-0144-01	1	83	-11	-16	-8	99	100	100	100
IHuS#ABL-0145-01	87	81	-14	-16	-16	-7	100	100	100
IHuS#ABL-0146-01	16	61	-16	-17	-16	74	100	100	100
IHuS#ABL-0147-01	72	163	-24	-29	-20	56	100	100	100
IHuS#ABL-0031-04	-35	24	-18	-26	-17	100	100	100	100
IHuS#ABL-0047-02	-5	24	-27	-26	-18	100	100	100	100
IHuS#ABL-0155-01	49	65	-4	-14	0	24	100	100	100
IHuS#ABL-0156-01	26	59	-7	-11	-10	57	100	100	100
IHuS#ABL-0157-01	98	261	-4	-13	-9	63	100	100	100
IHuS#ABL-0158-01	175	222	-13	-16	-7	21	100	100	100
IHuS#ABL-0164-01	-19	-17	-19	-22	-14				
IHuS#ABL-0166-01	-19	-18	-18	-18	-11				
IHuS#ABL-0167-01	-23	237	-20	-31	-11	100	100	100	100
IHuS#ABL-0168-01	-14	-11	-13	-14	-14				

Figure 7 (continued)

Sample	SEQ ID NO:58 (Q108L)	Referen ce A	Referen ce A (L11V, V89L)	Referen ce A (L11V, A74S, V89L)	Referen ce A (L11V, S49A, V89L)	SEQ ID NO:58 (Q108L)	Referen ce A (L11V, V89L)	Referen ce A (L11V, A74S, V89L)	Referen ce A (L11V, S49A, V89L)
IHuS#ABL-0169-01	-5	21	-10	-12	-11	100	100	100	100
IHuS#ABL-0170-01	86	242	-16	-19	-11	64	100	100	100
ABL-0041-01_C	34	77	-19	-31	-19	55	100	100	100
ABL-0053-01_C	176	302	-11	-10	-3	42	100	100	100
ABL-0054-01_C	249	293	-8	-13	-6	15	100	100	100
ABL-0045-01_C	379	434	43	21	36	13	90	95	92
ABL-0062-01_C	268	375	-7	-18	-8	29	100	100	100
ABL-0039-01_C	361	410	31	11	30	12	92	97	93
HSI#26062008Ind11	450	512	156	100	161	12	70	80	69
IHuS#29Sep2011Ind14F	151	221	36	22	39	32	84	90	82
IHuS#29Sep2011Ind39F	7	167	-9	-17	-9	96	100	100	100
IHuS#29Sep2011Ind43M	32	55	-9	-14	-11	42	100	100	100
IHuS#29Sep2011Ind44F	276	412	31	12	39	33	92	97	91
IHuS#P6012314A20	76	102	-10	-12	-8	25	100	100	100
IHuS#P7012314A06	133	216	-7	-16	-4	38	100	100	100
IHuS#P7012314A12	121	191	-13	-15	-13	37	100	100	100
IHuS#ABL-0195-01	231	296	-2	-10	1	22	100	100	100
IHuS#ABL-0208-01	351	384	50	26	49	9	87	93	87
IHuS#ABL-0184-01	66	238	-4	-13	-2	72	100	100	100
NB130259-004	39	71	-12	-12	-9	44	100	100	100
IHuS#04APR2012Ind05m	74	178	0	-14	4	59	100	100	98

Figure 7 (continued)

+`12111Q	1Q	11	Referen ce A (L11V, V89L)	1`	Referen ce A (L11V, S49A, V89L)	SEQ ID NO:58 (Q108L)	Referen ce A (L11V, V89L)	Referen ce A (L11V, A74S, V89L)	Referen ce A (L11V, S49A, V89L)
IHuS#04APR20 12Ind06m	70	194	-4	-6	3	64	100	100	98
IHuS#04APR20 12Ind07m	41	146	3	-3	4	72	98	100	97
IHuS#04APR20 12Ind09m	70	189	2	-3	-2	63	99	100	100
IHuS#04APR20 12Ind10m	138	234	-2	-5	-2	41	100	100	100
IHuS#04APR20 12Ind03F	245	342	10	6	17	28	97	98	95
IHuS#04APR20 12Ind04F	351	387	-8	-11	-9	9	100	100	100
IHuS#04APR20 12Ind15F	174	293	40	23	47	41	86	92	84
IHuS#04APR20 12Ind27F	160	319	29	7	26	50	91	98	92
IHuS#04APR20 12Ind29F	187	256	-2	-8	-5	27	100	100	100
IHuS#04APR20 12Ind31F	118	265	96	56	97	56	64	79	63
IHuS#04APR20 12Ind40F	95	257	-31	-40	-29	63	100	100	100

Figure 8A Predicted (P) and Experimentally (E) determined trypsin and chymotrypsin cleavage sites

Legend

"X" Protease sensitive residue

CDR

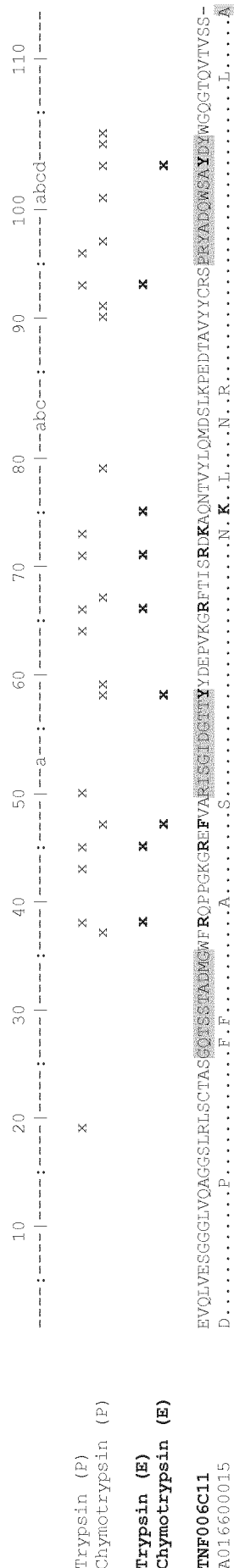


Figure 8B A01660015 analysis on Coomassie stained SDS PAGE gel

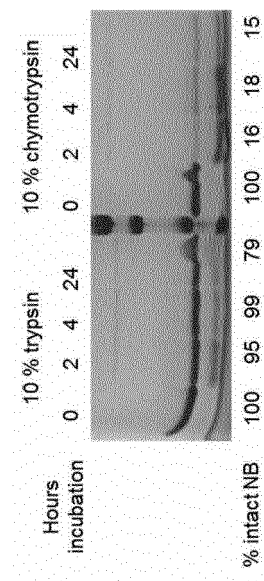


Figure 8C

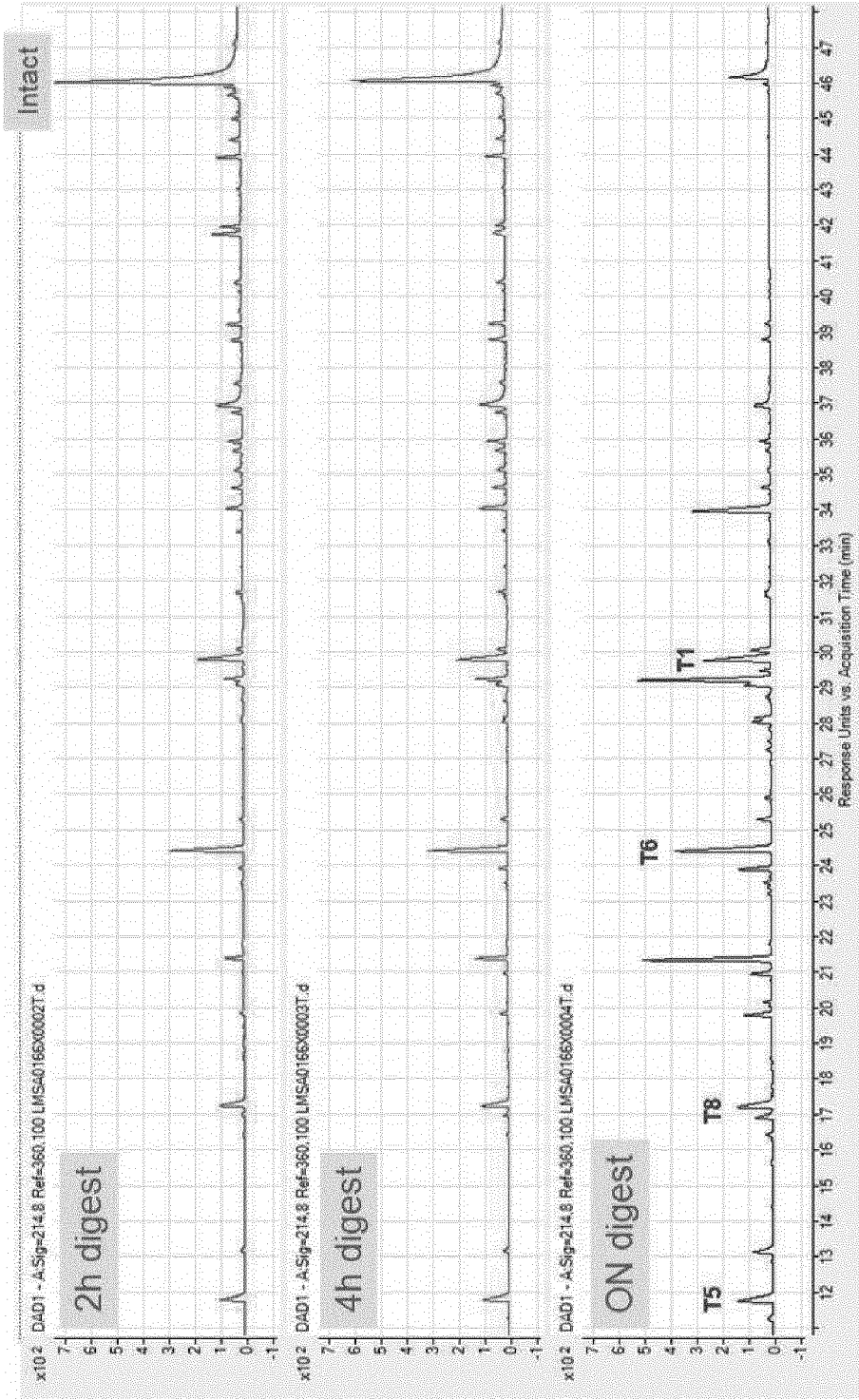


Figure 9

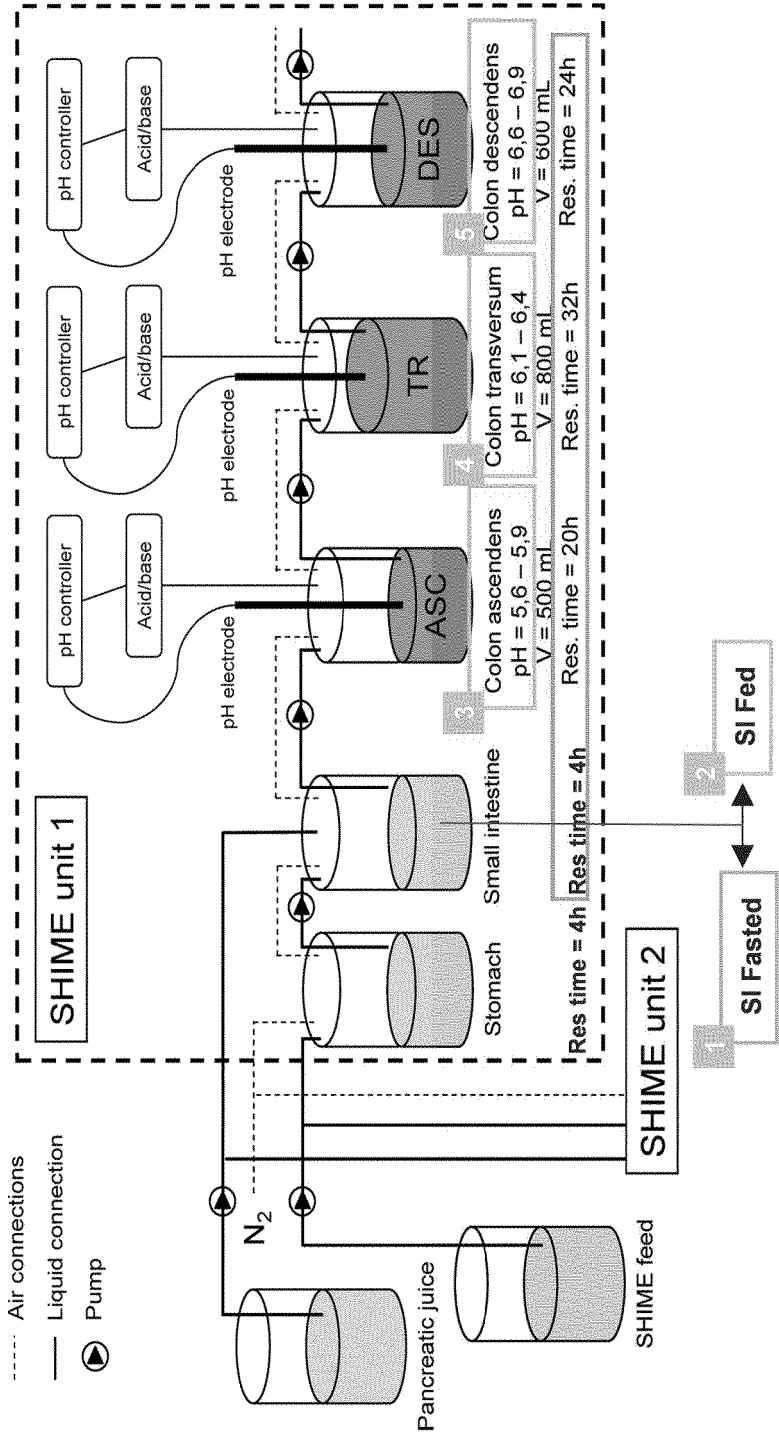


Figure 9

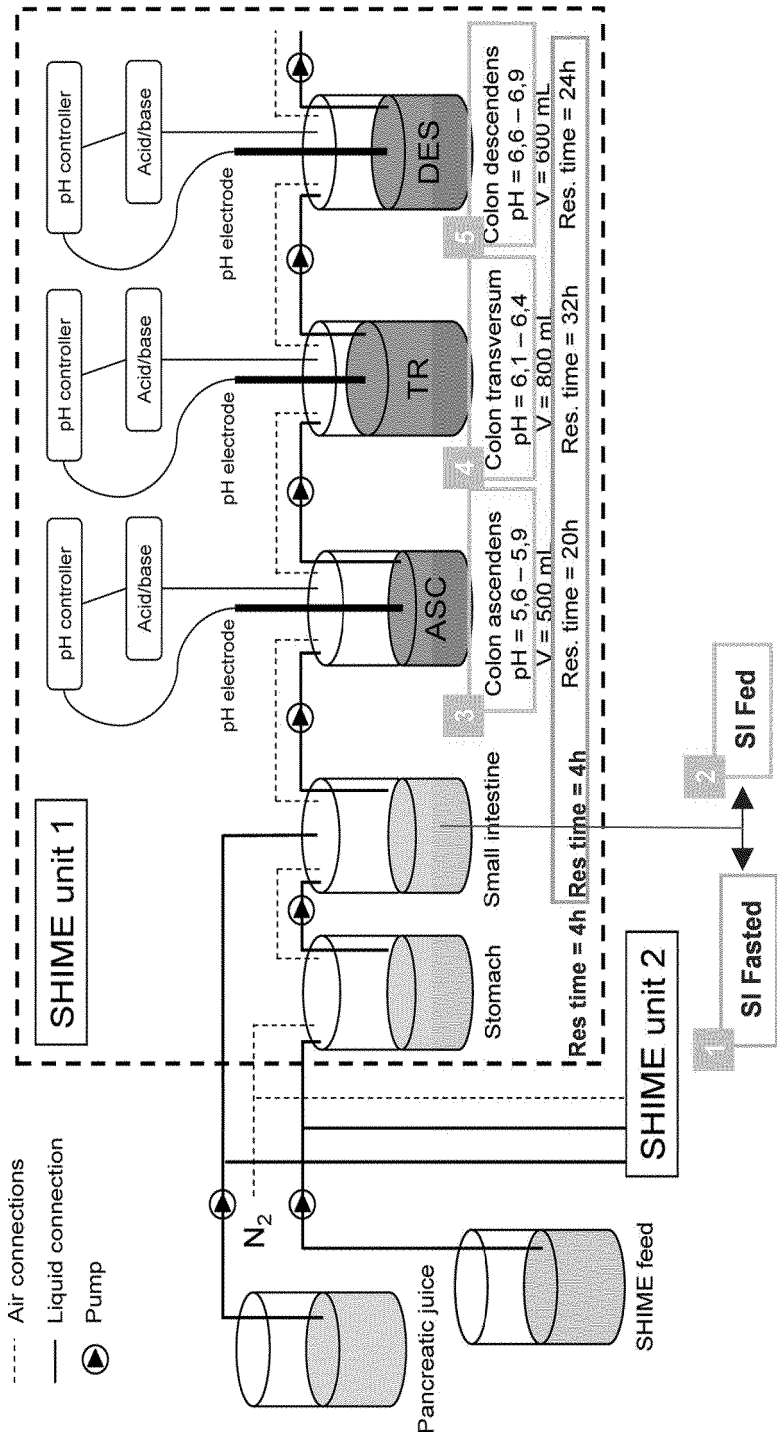
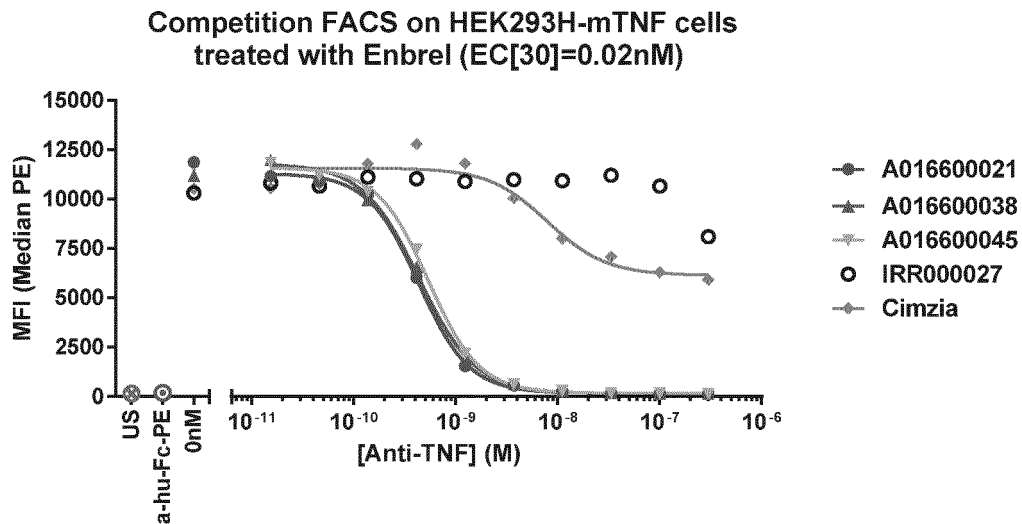


Figure 10

A



B

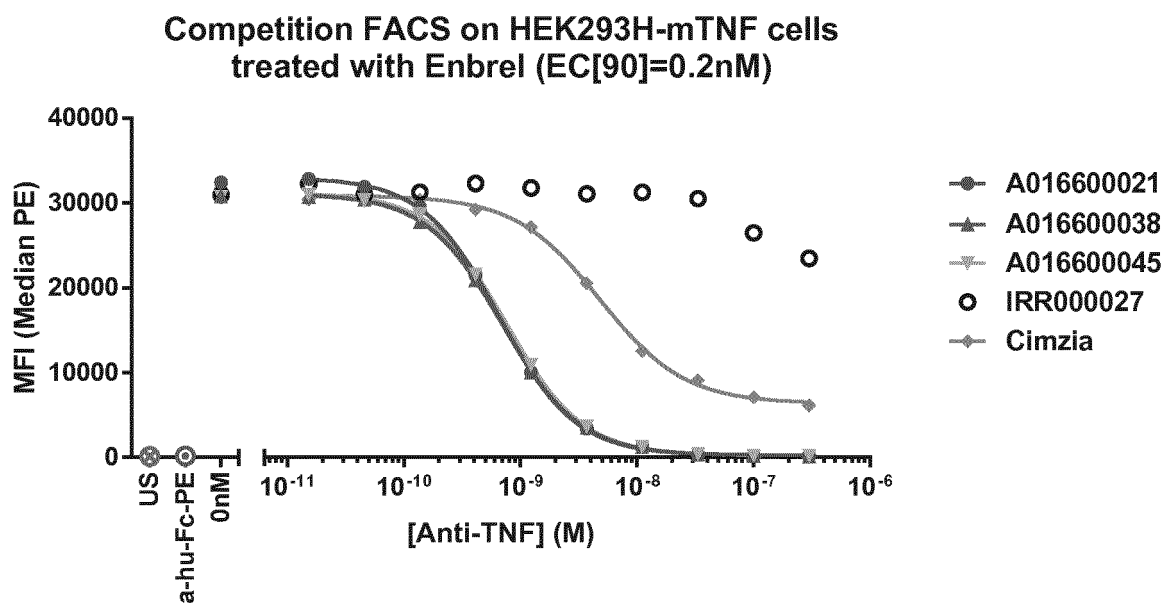


Figure 11