

## Amino acids Sequences of ten random clones from unselected library

Clone	FR1	CDR1	FR2	CDR2	FR3	CDR3	Germline	Amino acid different from germline	Family
<b>VH</b>									
1	QVQLQQSGPGLLKPSQTL SLTCAISGDSVS	SKGPAWN	WIRQSPSRGLEWLG	RTYYWSGWRHDYAP SLQS	RITINPDTSKNQFSLQLNSVTP DDTAVYYCAK	GRDSGFDI	IGHV6-1*01 (DP74)	12	VH3
2	VQLVESGGGLVKGPGESLR LSCEASGFA FS	SYNMN	WLRQAPGKGLEWVS	SMSPSGRDIFYPES LKG	RFTASRDNARNLSLYQMNSLRV EDTAMYYCVR	STLLEIAGKSPGLD M	IGHV3-21*01 (DP77)	20	VH3
3	QVNLRESGPTQVKPTQAL TLTCTVSGVLSLS	TSGVGVG	WLRQAPGKGLEWL A	LLYWDDDDRYNPSL KT	RLAITRGSSRDQVVLTVTNVDP SDTGTGYFCAH	RRSGLLVFGIRDAF DI	IGHV2-5*09 (S12-2)	24	VH2
4	VQLQQSGAEVKKPGSSVK VSCKASGGTFS	SYAIS	WVRQAPGQGLEWVG	GIIPIFGTANYAQK FQG	RVTITADESTSTAYMELSSLRS EDTAVYYCAR	VRDTAMEFFDY	IGHV1-69*12 (DP10)	2	VH1
5	QVQLQQSGPGLVKPSETL SLTCIVSGGSIT	SYSWS	WTRQAPGQGLEWIG	RIYNGGSTNYNPSL KS	RVTMSLDTSKNQFSLRLSSVTA ADTAVYYCAR	GPYGTGSQCHVFDP	IGHV4-4*07 (VIV4)	2	VH4
6	QVQMQESGAGLLNPLETL SLTCTVYGGSVS	NHYYYS	RIRQPPGKQGEWFA	YIHYTETNYNPSL KS	RVTISVDTSKNQFSLRLSSVTA ADTAVYYCAR	VDILSGMRHF	IGHV4-61*08 (DP66)	19	VH4
7	EVQLVESGAEVRRPGESL TISCRGSGDTFP	KHWIA	WVRQMPGKGLEWLG	RLDPSDSYTNYNPS FQG	HVSISADQSIISTVYLQWSSPKA SDTALYYCAR	LTCRTTSCYTDNWS DA	IGHV5-a*01 (VH32)	17	VH5
8	QVQLQQSGPGLVKPSQTL SLTCAISGDSVS	SNSAAWN	WIRQSPSRGLEWLG	RTYYRSKWyNEVAL SVKS	RLTINPDTSKNQFSLILNSVTP EDSAVYYCAT	WRFDY	IGHV6-1*01 (DP74)	5	VH6
9	EVQLVESGGGLVQPGGSL RLSCAASGFTFS	SYEMN	WVRQAPGKGLEWVS	YISSSGSTIYYADS VKG	RFTISRDNAKNSLYQMNSLRA EDTAVYYCAR	VSLDTAGDAFDI	IGHV3-48*03 (DP58)	0	VH3
10	VQLVQSGGGLVQPGGSLR LSCAASGFTFS	SYAMS	WVRQAPGKGLEWVS	AISGSGGSTYYADS VKG	RFTISRDNKNTLYQMNSLRA EDTAVYYCAK	DNTEMVRGVMLYYY YYMDV	IGHV3-23*04 (DP47)	1	VH3
<b>VL</b>									
1	DIQMTQSPDLSAVSLGER ATINC	KSSQSVLFSS NNKHHLA	WYQQKRGRLPPKLLI F	WASTRES	GVPDRFSGSGSGTDFTLTISL QAEDVAVYYC	QQYQSIPHT	IGKV4-1*01 (DPK24)	9	VK4
2	SSELTQDPAVVALGQTV RITC	QGDSLRTYYA S	WYQQKPGQAPVLVI Y	GKNRNP	GIPDRFSGSSGNTASLTITGA QAEDVAVYYC	NSRSDSDNHVV	IGLV3-19*01 (DPL16)	2	VL3
3	EIVLTQSPGTVSLSPGQR VTLSC	RASQSVRGSF FA	WYQQKPGQAPRLL IH	GASSRAT	GIPDRFDGSGSGTDFTLSISRL ETEDFVAVYYC	QQYGTSPYT	IGKV3-20*01 (DPK22)	12	VK3
4	QSALTQPASASGSPGQSV TISC	TGTISDIGAH DLVS	WYQQPPGKAPKLLI F	EVSKRAS	GVPDRFSGSKSGNAASLTISGL QADDEADYFC	CSSTNKNNFAVE	IGLV2-8*01 (V1-2)	19	VL2
5	QAVLTQPSLSASPGSSA SLTC	TLRSDFDVRS YRIY	WYQQKPGSPPQYLL R	FKSDSEKHRGS	GVPDRFSGSKDASANAGILLIS GLQFDEADYFC	MIYYNMASE	IGLV5-45*03 (V4-2)	16	VL5
6	EIVLTQSPPLYLPVTPGEP ASISC	RSSQSLLSN GNYLD	WYVQKPGQSPQLLI Y	LGSNRAS	GVPDRFSGSGSGTDFTLEISRV EAEDVGVYYC	MQALQTPK	IGKV2D-28*01 (DPK15)	5	VK2
7	QAVLTQPSLSASPGASA SLTC	TLRSGIDVAA YRIY	WYQQKPGSPPQYLL R	YKSDSDKQQGS	GVPDRFSGSKDASANAGILLIS GLQSQDEADYFC	AIWHNSAWV	IGLV5-45*03 (V4-2)	6	VL5
8	LTQPPSVSVSAGQTVSIT C	SGENLQKIYV S	WYQQKPGQSPILVI Y	KDNKRPS	GIPERFSGSNGNTATLTVSGA LAADAEAYFC	QTWDIDTAL	IGLV3-1*01 (DPL23)	23	VL3
9	SSELTQDPAVVALGQTV TITC	QGESLRNYFA S	WYQQKPGQAPILVM Y	DEDIRPS	GIPDRFSGSSSEKTASLTITGV QAEDVAVYYC	KCRGSGGDHLEIL	IGLV3-19*01 (DPL16)	19	VL3
10	NFMLTQPHSVSESPGKTV TISC	TRSSGFIDTN YVQ	WYQQRPGSAPTPI Y	ESKQRPS	GVPVRFSGSVDISSNSASLTIS GLETEDEADYFC	QSFDSNKLTV	IGLV6-57*01 (V1-22)	13	VL6

\* Analysis of germ line family was done by using Ig BLAST [36], and DNA Plot program [34] (shown in parenthesis).