

Figure 1A
Antibody Heavy chain Protein features

Antibody Sequence	FR1	CDR1	FR2	CDR2
Ab10	QSVESGGRLVTPGTFPLTCTVSGIDLN	SYIMT	WVRQAPGKGLEWIG	FIDAGGDYAYASWAKG
Ab20	QSVESGGRLVTPGTFPLTCTVSGIDL	SYIMS	WVRQAPGKGLEWIG	FIDTDCSAYYATWAKG
Ab21	QSVESGGRLVTPGTFPLTCTVSGIDL	SYIMT	WVRQAPGKGLEWVG	FIDAGGSAYYATWAKG
Ab22	QEQIVESGGGLVQPEGSLTCTASGEFDS	SNAMC	WVRQAPGKGLEWIG	SLYNADCKRYIATWAKG
Ab23	QSVESGGRLVTPGTFPLTCTVSGFLN	NYAMS	WVRQAPGKGLEWIG	IMGVNDITYYASWAKG
Ab10.H	EVQLVESGGGLVQPGGSLRLSCAASGIDLN	SYIMT	WVRQAPGKGLEWIG	FIDAGGDYAYASWAKG
Ab21.H	EVQLVESGGGLVQPGGSLRLSCAASGIDLS	SYIMT	WVRQAPGKGLEWIG	FIDAGGSAYYATWAKG
Ab10.H2	EVQLVESGGGLVQPGGSLRLSCAASGIDLN	SYIMT	WVRQAPGKGLEWIG	FIDAGGDYAYASWAKG
Ab10.H3	EVQLVESGGGLVQPGGSLRLSCAASGIDLN	SYIMT	WVRQAPGKGLEWIG	FIDAGGDYAYASWAKG
Ab10.H4	EVQLVESGGGLVQPGGSLRLSCAASGIDLN	SYIMT	WVRQAPGKGLEWIG	FIDAGGDYAYASWAKG
Ab10.H5	EVQLVESGGGLVQPGGSLRLSCAASGIDLN	SYIMT	WVRQAPGKGLEWIG	FIDAGGDYAYASWAKG
Ab10.H6	EVQLVESGGGLVQPGGSLRLSCAASGIDLN	SYIMT	WVRQAPGKGLEWIG	FIDAGGDYAYASWAKG
Ab21.H2	EVQLVESGGGLVQPGGSLRLSCAASGIDLS	SYIMT	WVRQAPGKGLEWIG	FIDAGGSAYYATWAKG
Ab21.H3	EVQLVESGGGLVQPGGSLRLSCAASGIDLS	SYIMT	WVRQAPGKGLEWIG	FIDAGGSAYYATWAKG
Ab21.H4	EVQLVESGGGLVQPGGSLRLSCAASGIDLS	SYIMT	WVRQAPGKGLEWIG	FIDAGGSAYYATWAKG

Figure 1B
Antibody Heavy chain Protein features

Antibody Sequence	FR3	CDR3	FR4
Ab10	RFTISKTSITVDLKITSPTEEDTATYFCAR	DLDL	WGQGTLLVTSS
Ab20	RFTISKTSITVDLKITSPTEEDTATYFCAR	DLDL	WGPGTLVTSS
Ab21	RFTISKASTVDLKITSPTEEDTATYFCAR	DLDL	WGPGTLVTSS
Ab22	RFTISKTSITVTTLQMTSLTAEDTATYFCAR	DFDL	WGQGTLLVTSS
Ab23	RFTISKTSITVDLKITSPTEEDTATYFCAR	EIRDGDSDDL	WGPGTLVTSS
Ab10.H	RFTISRDNKNTVYLQMSLRADTAVYFCAR	DLDL	WGQGTLLVTSS
Ab21.H	RFTISRDNKNTVYLQMSLRADTAVYFCAR	DLDL	WGQGTLLVTSS
Ab10.H2	RFTISRDNKNTVYLQMSLRADTAVYFCAR	DLDL	WGQGTLLVTSS
Ab10.H3	RFTISRDNKNTVYLQMSLRADTAVYFCAR	DLDL	WGQGTLLVTSS
Ab10.H4	RFTISRDNKNTVYLQMSLRADTAVYFCAR	DLDL	WGQGTLLVTSS
Ab10.H5	RFTISRDNKNTVYLQMSLRADTAVYFCAR	DLDL	WGQGTLLVTSS
Ab10.H6	RFTISRDNKNTVYLQMSLRADTAVYFCAR	DLDL	WGQGTLLVTSS
Ab21.H2	RFTISRDNKNTVYLQMSLRADTAVYFCAR	DLDL	WGQGTLLVTSS
Ab21.H3	RFTISRDNKNTVYLQMSLRADTAVYFCAR	DLDL	WGQGTLLVTSS
Ab21.H4	RFTISRDNKNTVYLQMSLRADTAVYFCAR	DLDL	WGQGTLLVTSS

Figure 1C

Antibody Heavy chain Protein features		
Sequence	Name	
	Constant region	
Ab10	ASTKGPSVFPLAPSSKSTSGGTAALGLCLVKDYFPEPTVSNWNGALTSGVHTFPAVLQSSGLYSLSSVWTVPPSSSL	
Ab20	ASTKGPSVFPLAPSSKSTSGGTAALGLCLVKDYFPEPTVSNWNGALTSGVHTFPAVLQSSGLYSLSSVWTVPPSSSL	
Ab21	ASTKGPSVFPLAPSSKSTSGGTAALGLCLVKDYFPEPTVSNWNGALTSGVHTFPAVLQSSGLYSLSSVWTVPPSSSL	
Ab22	ASTKGPSVFPLAPSSKSTSGGTAALGLCLVKDYFPEPTVSNWNGALTSGVHTFPAVLQSSGLYSLSSVWTVPPSSSL	
Ab23	ASTKGPSVFPLAPSSKSTSGGTAALGLCLVKDYFPEPTVSNWNGALTSGVHTFPAVLQSSGLYSLSSVWTVPPSSSL	
Ab10.H	ASTKGPSVFPLAPSSKSTSGGTAALGLCLVKDYFPEPTVSNWNGALTSGVHTFPAVLQSSGLYSLSSVWTVPPSSSL	
Ab21.H	ASTKGPSVFPLAPSSKSTSGGTAALGLCLVKDYFPEPTVSNWNGALTSGVHTFPAVLQSSGLYSLSSVWTVPPSSSL	
Ab10.H2	ASTKGPSVFPLAPSSKSTSGGTAALGLCLVKDYFPEPTVSNWNGALTSGVHTFPAVLQSSGLYSLSSVWTVPPSSSL	
Ab10.H3	ASTKGPSVFPLAPSSKSTSGGTAALGLCLVKDYFPEPTVSNWNGALTSGVHTFPAVLQSSGLYSLSSVWTVPPSSSL	
Ab10.H4	ASTKGPSVFPLAPSSKSTSGGTAALGLCLVKDYFPEPTVSNWNGALTSGVHTFPAVLQSSGLYSLSSVWTVPPSSSL	
Ab10.H5	ASTKGPSVFPLAPSSKSTSGGTAALGLCLVKDYFPEPTVSNWNGALTSGVHTFPAVLQSSGLYSLSSVWTVPPSSSL	
Ab10.H6	ASTKGPSVFPLAPSSKSTSGGTAALGLCLVKDYFPEPTVSNWNGALTSGVHTFPAVLQSSGLYSLSSVWTVPPSSSL	
Ab21.H2	ASTKGPSVFPLAPSSKSTSGGTAALGLCLVKDYFPEPTVSNWNGALTSGVHTFPAVLQSSGLYSLSSVWTVPPSSSL	
Ab21.H3	ASTKGPSVFPLAPSSKSTSGGTAALGLCLVKDYFPEPTVSNWNGALTSGVHTFPAVLQSSGLYSLSSVWTVPPSSSL	
Ab21.H4	ASTKGPSVFPLAPSSKSTSGGTAALGLCLVKDYFPEPTVSNWNGALTSGVHTFPAVLQSSGLYSLSSVWTVPPSSSL	

Figure 1D

Antibody Heavy chain Protein features		
Sequence	Constant region	
Ab10	GTQTYICWNHPSNTKVDARVEPKSCDKTHCTCPCAPPELLGGPSVFLPPPKKDTLMISRTPEVTCVVDVSH	
Ab20	GTQTYICWNHPSNTKVDARVEPKSCDKTHCTCPCAPPELLGGPSVFLPPPKKDTLMISRTPEVTCVVDVSH	
Ab21	GTQTYICWNHPSNTKVDARVEPKSCDKTHCTCPCAPPELLGGPSVFLPPPKKDTLMISRTPEVTCVVDVSH	
Ab22	GTQTYICWNHPSNTKVDARVEPKSCDKTHCTCPCAPPELLGGPSVFLPPPKKDTLMISRTPEVTCVVDVSH	
Ab23	GTQTYICWNHPSNTKVDARVEPKSCDKTHCTCPCAPPELLGGPSVFLPPPKKDTLMISRTPEVTCVVDVSH	
Ab10.H	GTQTYICWNHPSNTKVDARVEPKSCDKTHCTCPCAPPELLGGPSVFLPPPKKDTLMISRTPEVTCVVDVSH	
Ab21.H	GTQTYICWNHPSNTKVDARVEPKSCDKTHCTCPCAPPELLGGPSVFLPPPKKDTLMISRTPEVTCVVDVSH	
Ab10.H2	GTQTYICWNHPSNTKVDARVEPKSCDKTHCTCPCAPPELLGGPSVFLPPPKKDTLMISRTPEVTCVVDVSH	
Ab10.H3	GTQTYICWNHPSNTKVDARVEPKSCDKTHCTCPCAPPELLGGPSVFLPPPKKDTLMISRTPEVTCVVDVSH	
Ab10.H4	GTQTYICWNHPSNTKVDARVEPKSCDKTHCTCPCAPPELLGGPSVFLPPPKKDTLMISRTPEVTCVVDVSH	
Ab10.H5	GTQTYICWNHPSNTKVDARVEPKSCDKTHCTCPCAPPELLGGPSVFLPPPKKDTLMISRTPEVTCVVDVSH	
Ab10.H6	GTQTYICWNHPSNTKVDARVEPKSCDKTHCTCPCAPPELLGGPSVFLPPPKKDTLMISRTPEVTCVVDVSH	
Ab21.H2	GTQTYICWNHPSNTKVDARVEPKSCDKTHCTCPCAPPELLGGPSVFLPPPKKDTLMISRTPEVTCVVDVSH	
Ab21.H3	GTQTYICWNHPSNTKVDARVEPKSCDKTHCTCPCAPPELLGGPSVFLPPPKKDTLMISRTPEVTCVVDVSH	
Ab21.H4	GTQTYICWNHPSNTKVDARVEPKSCDKTHCTCPCAPPELLGGPSVFLPPPKKDTLMISRTPEVTCVVDVSH	

Figure 1E
Antibody Heavy chain Protein features

Sequence	Constant region
Name	
Ab10	EDPEVKFNWYVDGVEVHNAKTRPREEQYASTYRVVSVLTVLHQDWLNGKEYKCKVSNKALPAPIEKTISKAKGQPF
Ab20	EDPEVKFNWYVDGVEVHNAKTRPREEQYASTYRVVSVLTVLHQDWLNGKEYKCKVSNKALPAPIEKTISKAKGQPF
Ab21	EDPEVKFNWYVDGVEVHNAKTRPREEQYASTYRVVSVLTVLHQDWLNGKEYKCKVSNKALPAPIEKTISKAKGQPF
Ab22	EDPEVKFNWYVDGVEVHNAKTRPREEQYASTYRVVSVLTVLHQDWLNGKEYKCKVSNKALPAPIEKTISKAKGQPF
Ab23	EDPEVKFNWYVDGVEVHNAKTRPREEQYASTYRVVSVLTVLHQDWLNGKEYKCKVSNKALPAPIEKTISKAKGQPF
Ab10.H	EDPEVKFNWYVDGVEVHNAKTRPREEQYASTYRVVSVLTVLHQDWLNGKEYKCKVSNKALPAPIEKTISKAKGQPF
Ab21.H	EDPEVKFNWYVDGVEVHNAKTRPREEQYASTYRVVSVLTVLHQDWLNGKEYKCKVSNKALPAPIEKTISKAKGQPF
Ab10.H2	EDPEVKFNWYVDGVEVHNAKTRPREEQYASTYRVVSVLTVLHQDWLNGKEYKCKVSNKALPAPIEKTISKAKGQPF
Ab10.H3	EDPEVKFNWYVDGVEVHNAKTRPREEQYASTYRVVSVLTVLHQDWLNGKEYKCKVSNKALPAPIEKTISKAKGQPF
Ab10.H4	EDPEVKFNWYVDGVEVHNAKTRPREEQYASTYRVVSVLTVLHQDWLNGKEYKCKVSNKALPAPIEKTISKAKGQPF
Ab10.H5	EDPEVKFNWYVDGVEVHNAKTRPREEQYASTYRVVSVLTVLHQDWLNGKEYKCKVSNKALPAPIEKTISKAKGQPF
Ab10.H6	EDPEVKFNWYVDGVEVHNAKTRPREEQYASTYRVVSVLTVLHQDWLNGKEYKCKVSNKALPAPIEKTISKAKGQPF
Ab21.H2	EDPEVKFNWYVDGVEVHNAKTRPREEQYASTYRVVSVLTVLHQDWLNGKEYKCKVSNKALPAPIEKTISKAKGQPF
Ab21.H3	EDPEVKFNWYVDGVEVHNAKTRPREEQYASTYRVVSVLTVLHQDWLNGKEYKCKVSNKALPAPIEKTISKAKGQPF
Ab21.H4	EDPEVKFNWYVDGVEVHNAKTRPREEQYASTYRVVSVLTVLHQDWLNGKEYKCKVSNKALPAPIEKTISKAKGQPF

Figure 1F
Antibody Heavy chain Protein features

Sequence	Constant region
Name	
Ab10	REPQVYTLPPSREEMTKNQVSLTCLVKGFYPSDIAVEWESNGQPENNYKTPPVLDSDGSFFLYSKLTVDKSRWQ
Ab20	REPQVYTLPPSREEMTKNQVSLTCLVKGFYPSDIAVEWESNGQPENNYKTPPVLDSDGSFFLYSKLTVDKSRWQ
Ab21	REPQVYTLPPSREEMTKNQVSLTCLVKGFYPSDIAVEWESNGQPENNYKTPPVLDSDGSFFLYSKLTVDKSRWQ
Ab22	REPQVYTLPPSREEMTKNQVSLTCLVKGFYPSDIAVEWESNGQPENNYKTPPVLDSDGSFFLYSKLTVDKSRWQ
Ab23	REPQVYTLPPSREEMTKNQVSLTCLVKGFYPSDIAVEWESNGQPENNYKTPPVLDSDGSFFLYSKLTVDKSRWQ
Ab10.H	REPQVYTLPPSREEMTKNQVSLTCLVKGFYPSDIAVEWESNGQPENNYKTPPVLDSDGSFFLYSKLTVDKSRWQ
Ab21.H	REPQVYTLPPSREEMTKNQVSLTCLVKGFYPSDIAVEWESNGQPENNYKTPPVLDSDGSFFLYSKLTVDKSRWQ
Ab10.H2	REPQVYTLPPSREEMTKNQVSLTCLVKGFYPSDIAVEWESNGQPENNYKTPPVLDSDGSFFLYSKLTVDKSRWQ
Ab10.H3	REPQVYTLPPSREEMTKNQVSLTCLVKGFYPSDIAVEWESNGQPENNYKTPPVLDSDGSFFLYSKLTVDKSRWQ
Ab10.H4	REPQVYTLPPSREEMTKNQVSLTCLVKGFYPSDIAVEWESNGQPENNYKTPPVLDSDGSFFLYSKLTVDKSRWQ
Ab10.H5	REPQVYTLPPSREEMTKNQVSLTCLVKGFYPSDIAVEWESNGQPENNYKTPPVLDSDGSFFLYSKLTVDKSRWQ
Ab10.H6	REPQVYTLPPSREEMTKNQVSLTCLVKGFYPSDIAVEWESNGQPENNYKTPPVLDSDGSFFLYSKLTVDKSRWQ
Ab21.H2	REPQVYTLPPSREEMTKNQVSLTCLVKGFYPSDIAVEWESNGQPENNYKTPPVLDSDGSFFLYSKLTVDKSRWQ
Ab21.H3	REPQVYTLPPSREEMTKNQVSLTCLVKGFYPSDIAVEWESNGQPENNYKTPPVLDSDGSFFLYSKLTVDKSRWQ
Ab21.H4	REPQVYTLPPSREEMTKNQVSLTCLVKGFYPSDIAVEWESNGQPENNYKTPPVLDSDGSFFLYSKLTVDKSRWQ

Figure 1G
Antibody Heavy chain Protein features

Sequence	Name	Constant region	SEQ ID NO: 401)
Ab10	Ab10	QGNVFCSCVMHEALNNHYTKSLSPGK	(SEQ ID NO: 401)
Ab20	Ab20	QGNVFCSCVMHEALNNHYTKSLSPGK	(SEQ ID NO: 441)
Ab21	Ab21	QGNVFCSCVMHEALNNHYTKSLSPGK	(SEQ ID NO: 841)
Ab22	Ab22	QGNVFCSCVMHEALNNHYTKSLSPGK	(SEQ ID NO: 881)
Ab23	Ab23	QGNVFCSCVMHEALNNHYTKSLSPGK	(SEQ ID NO: 921)
Ab10.H	Ab10.H	QGNVFCSCVMHEALNNHYTKSLSPGK	(SEQ ID NO: 961)
Ab21.H	Ab21.H	QGNVFCSCVMHEALNNHYTKSLSPGK	(SEQ ID NO: 1201)
Ab10.H2	Ab10.H2	QGNVFCSCVMHEALNNHYTKSLSPGK	(SEQ ID NO: 1281)
Ab10.H3	Ab10.H3	QGNVFCSCVMHEALNNHYTKSLSPGK	(SEQ ID NO: 1321)
Ab10.H4	Ab10.H4	QGNVFCSCVMHEALNNHYTKSLSPGK	(SEQ ID NO: 1361)
Ab10.H5	Ab10.H5	QGNVFCSCVMHEALNNHYTKSLSPGK	(SEQ ID NO: 1401)
Ab10.H6	Ab10.H6	QGNVFCSCVMHEALNNHYTKSLSPGK	(SEQ ID NO: 1441)
Ab21.H2	Ab21.H2	QGNVFCSCVMHEALNNHYTKSLSPGK	(SEQ ID NO: 1481)
Ab21.H3	Ab21.H3	QGNVFCSCVMHEALNNHYTKSLSPGK	(SEQ ID NO: 1521)
Ab21.H4	Ab21.H4	QGNVFCSCVMHEALNNHYTKSLSPGK	(SEQ ID NO: 1561)

Figure 2A
Antibody Light chain Protein features

Sequence	Name	FR1	CDR1	FR2	CDR2
Ab10	Ab10	AAVLQTTPSPVSAAVGGVTIMC	QSESVYGNVLA	WFOQKPGQPPKLLIY	EASKLES
Ab20	Ab20	AAVLQTTPSPVSAAVGGTVSISC	QSESVYGNVLA	WFOQKPGQPPKLLIY	EASKLAS
Ab21	Ab21	AAVLQTTPSPVSAAVGGTVSISC	KSESVYGDVLA	WFOQKPGQPPKLLIY	DASTLAS
Ab22	Ab22	AAVLQTTPSPVSAAVGGVTIMC	QSSQSVYDNDVLA	WFOQKPGQPPKLLIY	LTSTLAS
Ab23	Ab23	AIRMQTTPSPVSAAVGGVTIMC	QASEDIYTNLA	WFOQKPGQPPNLLIY	DASDLAS
Ab10.H	Ab10.H	DAQLTQSPSTLSASVGDRTITC	QSESVYGNVLA	WFOQKPGKAPKFLIY	EASKLES
Ab21.H	Ab21.H	DAQLTQSPSTLSASVGDRTITC	KSESVYGDVLA	WFOQKPGKAPKQLIY	DASTLAS
Ab10.H2	Ab10.H2	AVLTQSPSTLSASVGDRTITC	QSESVYGNVLA	WFOQKPGKAPKFLIY	EASKLES
Ab10.H3	Ab10.H3	DIQLTQSPSTLSASVGDRTITC	QSESVYGNVLA	WFOQKPGKAPKFLIY	EASKLES
Ab10.H4	Ab10.H4	DIQLTQSPSTLSASVGDRTITC	QSESVYGNVLA	WFOQKPGKAPKFLIY	EASKLES
Ab10.H5	Ab10.H5	QLTQSPSTLSASVGDRTITC	QSESVYGNVLA	WFOQKPGKAPKFLIY	EASKLES
Ab10.H6	Ab10.H6	QVLQSPSTLSASVGDRTITC	QSESVYGNVLA	WFOQKPGKAPKFLIY	EASKLES
Ab21.H2	Ab21.H2	AVLTQSPSTLSASVGDRTITC	KSESVYGNVLA	WFOQKPGKAPKFLIY	EASKLES
Ab21.H3	Ab21.H3	DIQLTQSPSTLSASVGDRTITC	KSESVYGDVLA	WFOQKPGKAPKQLIY	DASTLAS
Ab21.H4	Ab21.H4	DIQLTQSPSTLSASVGDRTITC	KSESVYGDVLA	WFOQKPGKAPKQLIY	DASTLAS

Figure 2B

Antibody Light chain Protein features

Sequence	Name	FR3	FR4	CDR3
Ab10	Ab10	GVPSRFSGSGGTQFTLTISDLQCDAAATYC	FGGTEWVKR	AGGDISGVA
Ab20	Ab20	GVPSRFSGSGGTQFTLTISDVQCDDATYC	FGGTEWVKR	AGGYSSEGA
Ab21	Ab21	GVPSRFSGSGGTQFTLTISGVQCDDAAATYC	FGGTEWVKR	AGGYVSAGVA
Ab22	Ab22	GVPSRFSGSGGTQFTLTISGVQCDDAAATYC	FGGTEWVKR	LGXYDEGDTHV
Ab23	Ab23	GVPSRFSGSGGTQFTLTISAVQCDDAAATYC	FGGTEWVKR	QGVAVSSNTGYSKA
Ab10.H	Ab10.H	GVPSRFSGSGGTQFTLTISLQPDDEFATYC	FGGTRKVEIKR	AGGDISGVA
Ab21.H	Ab21.H	GVPSRFSGSGGTQFTLTISLQPDDEFATYC	FGGTRKVEIKR	AGGYVSAGVA
Ab10.H2	Ab10.H2	GVPSRFSGSGGTQFTLTISLQPDDEFATYC	FGGTRKVEIKR	AGGDISGVA
Ab10.H3	Ab10.H3	GVPSRFSGSGGTQFTLTISLQPDDEFATYC	FGGTRKVEIKR	AGGDISGVA
Ab10.H4	Ab10.H4	GVPSRFSGSGGTQFTLTISLQPDDEFATYC	FGGTRKVEIKR	AGGDISGVA
Ab10.H5	Ab10.H5	GVPSRFSGSGGTQFTLTISLQPDDEFATYC	FGGTRKVEIKR	AGGDISGVA
Ab10.H6	Ab10.H6	GVPSRFSGSGGTQFTLTISLQPDDEFATYC	FGGTRKVEIKR	AGGDISGVA
Ab21.H2	Ab21.H2	GVPSRFSGSGGTQFTLTISLQPDDEFATYC	FGGTRKVEIKR	AGGYVSAGVA
Ab21.H3	Ab21.H3	GVPSRFSGSGGTQFTLTISLQPDDEFATYC	FGGTRKVEIKR	AGGYVSAGVA
Ab21.H4	Ab21.H4	GVPSRFSGSGGTQFTLTISLQPDDEFATYC	FGGTRKVEIKR	AGGYVSAGVA

Figure 2C

Antibody Light chain Protein features

Sequence	Name	Constant region
Ab10	Ab10	TVAAPSVFIFPPSDEQLKSGTASVVCCLNNFYPREAKVQWKVDNALQSGNSQESVTEQDSKDSYSLSSLTLSKA
Ab20	Ab20	TVAAPSVFIFPPSDEQLKSGTASVVCCLNNFYPREAKVQWKVDNALQSGNSQESVTEQDSKDSYSLSSLTLSKA
Ab21	Ab21	TVAAPSVFIFPPSDEQLKSGTASVVCCLNNFYPREAKVQWKVDNALQSGNSQESVTEQDSKDSYSLSSLTLSKA
Ab22	Ab22	TVAAPSVFIFPPSDEQLKSGTASVVCCLNNFYPREAKVQWKVDNALQSGNSQESVTEQDSKDSYSLSSLTLSKA
Ab23	Ab23	TVAAPSVFIFPPSDEQLKSGTASVVCCLNNFYPREAKVQWKVDNALQSGNSQESVTEQDSKDSYSLSSLTLSKA
Ab10.H	Ab10.H	TVAAPSVFIFPPSDEQLKSGTASVVCCLNNFYPREAKVQWKVDNALQSGNSQESVTEQDSKDSYSLSSLTLSKA
Ab21.H	Ab21.H	TVAAPSVFIFPPSDEQLKSGTASVVCCLNNFYPREAKVQWKVDNALQSGNSQESVTEQDSKDSYSLSSLTLSKA
Ab10.H2	Ab10.H2	TVAAPSVFIFPPSDEQLKSGTASVVCCLNNFYPREAKVQWKVDNALQSGNSQESVTEQDSKDSYSLSSLTLSKA
Ab10.H3	Ab10.H3	TVAAPSVFIFPPSDEQLKSGTASVVCCLNNFYPREAKVQWKVDNALQSGNSQESVTEQDSKDSYSLSSLTLSKA
Ab10.H4	Ab10.H4	TVAAPSVFIFPPSDEQLKSGTASVVCCLNNFYPREAKVQWKVDNALQSGNSQESVTEQDSKDSYSLSSLTLSKA
Ab10.H5	Ab10.H5	TVAAPSVFIFPPSDEQLKSGTASVVCCLNNFYPREAKVQWKVDNALQSGNSQESVTEQDSKDSYSLSSLTLSKA
Ab10.H6	Ab10.H6	TVAAPSVFIFPPSDEQLKSGTASVVCCLNNFYPREAKVQWKVDNALQSGNSQESVTEQDSKDSYSLSSLTLSKA
Ab21.H2	Ab21.H2	TVAAPSVFIFPPSDEQLKSGTASVVCCLNNFYPREAKVQWKVDNALQSGNSQESVTEQDSKDSYSLSSLTLSKA
Ab21.H3	Ab21.H3	TVAAPSVFIFPPSDEQLKSGTASVVCCLNNFYPREAKVQWKVDNALQSGNSQESVTEQDSKDSYSLSSLTLSKA
Ab21.H4	Ab21.H4	TVAAPSVFIFPPSDEQLKSGTASVVCCLNNFYPREAKVQWKVDNALQSGNSQESVTEQDSKDSYSLSSLTLSKA

Figure 2D
Antibody Light chain Protein features

Sequence	Name	Constant region	(SEQ ID NO: 421)
Ab10	DYKHKVIACEVTHQGLSSPVTKSFNRGEC	(SEQ ID NO: 461)	
Ab20	DYKHKVIACEVTHQGLSSPVTKSFNRGEC	(SEQ ID NO: 861)	
Ab21	DYKHKVIACEVTHQGLSSPVTKSFNRGEC	(SEQ ID NO: 901)	
Ab22	DYKHKVIACEVTHQGLSSPVTKSFNRGEC	(SEQ ID NO: 941)	
Ab23	DYKHKVIACEVTHQGLSSPVTKSFNRGEC	(SEQ ID NO: 981)	
Ab10.H	DYKHKVIACEVTHQGLSSPVTKSFNRGEC	(SEQ ID NO: 1221)	
Ab21.H	DYKHKVIACEVTHQGLSSPVTKSFNRGEC	(SEQ ID NO: 1301)	
Ab10.H2	DYKHKVIACEVTHQGLSSPVTKSFNRGEC	(SEQ ID NO: 1341)	
Ab10.H3	DYKHKVIACEVTHQGLSSPVTKSFNRGEC	(SEQ ID NO: 1381)	
Ab10.H4	DYKHKVIACEVTHQGLSSPVTKSFNRGEC	(SEQ ID NO: 1421)	
Ab10.H5	DYKHKVIACEVTHQGLSSPVTKSFNRGEC	(SEQ ID NO: 1461)	
Ab21.H2	DYKHKVIACEVTHQGLSSPVTKSFNRGEC	(SEQ ID NO: 1501)	
Ab21.H3	DYKHKVIACEVTHQGLSSPVTKSFNRGEC	(SEQ ID NO: 1541)	
Ab21.H4	DYKHKVIACEVTHQGLSSPVTKSFNRGEC	(SEQ ID NO: 1581)	

Figure 3A
Antibody Heavy chain DNA features

Sequence	Name	FRI
Ab10	cagtcggtggagagtcgcgggggtgcgcctggtcacgcctgggacacccctgacactcaacctgacagtcctctctggaa	
Ab20	cagtcggtggagagtcgcgggggtgcgcctggtcacgcctgggacacccctgacactcaacctgacagtcctctctggaa	
Ab21	cagtcggtggagagtcgcgggggtgcgcctggtcacgcctgggacacccctgacactcaacctgacagtcctctctggaa	
Ab22	cagtcggtggagagtcgcgggggtgcgcctggtcacgcctgggacacccctgacactcaacctgacagtcctctctggaa	
Ab23	cagtcggtggagagtcgcgggggtgcgcctggtcacgcctgggacacccctgacactcaacctgacagtcctctctggaa	
Ab10.H	cagtcggtggagagtcgcgggggtgcgcctggtcacgcctgggacacccctgacactcaacctgacagtcctctctggaa	
Ab21.H	cagtcggtggagagtcgcgggggtgcgcctggtcacgcctgggacacccctgacactcaacctgacagtcctctctggaa	
Ab10.H2	cagtcggtggagagtcgcgggggtgcgcctggtcacgcctgggacacccctgacactcaacctgacagtcctctctggaa	
Ab10.H3	cagtcggtggagagtcgcgggggtgcgcctggtcacgcctgggacacccctgacactcaacctgacagtcctctctggaa	
Ab10.H4	cagtcggtggagagtcgcgggggtgcgcctggtcacgcctgggacacccctgacactcaacctgacagtcctctctggaa	
Ab10.H5	cagtcggtggagagtcgcgggggtgcgcctggtcacgcctgggacacccctgacactcaacctgacagtcctctctggaa	
Ab10.H6	cagtcggtggagagtcgcgggggtgcgcctggtcacgcctgggacacccctgacactcaacctgacagtcctctctggaa	
Ab21.H2	cagtcggtggagagtcgcgggggtgcgcctggtcacgcctgggacacccctgacactcaacctgacagtcctctctggaa	
Ab21.H3	cagtcggtggagagtcgcgggggtgcgcctggtcacgcctgggacacccctgacactcaacctgacagtcctctctggaa	
Ab21.H4	cagtcggtggagagtcgcgggggtgcgcctggtcacgcctgggacacccctgacactcaacctgacagtcctctctggaa	

Figure 3B
Antibody Heavy chain DNA features

Sequence	FR1	CDR1	FR2
Ab10	tcgacctcaat	agctactaatgacc	tgggtccgcaggtccagggaagggtggagtggatcgga
Ab20	tgcacctcagt	agctactaatgacc	tgggtccgcaggtccagggaagggtggagtggatcgga
Ab21	tgcacctcagt	agctactaatgacc	tgggtccgcaggtccagggaagggtggagtggatcgga
Ab22	gattcgacttcagt	agcaatgcaatgac	tgggtccgcaggtccagggaagggtggagtggatcgga
Ab23	tctccctcaat	aactatgcaatgac	tgggtccgcaggtccagggaagggtggagtggatcgga
Ab10.H	gaatcgacctcaat	agctactaatgacc	tgggtccgcaggtccagggaagggtggagtggatcgga
Ab21.H	gaatcgacctcagt	agctactaatgacc	tgggtccgcaggtccagggaagggtggagtggatcgga
Ab10.H2	gaatcgacctcaat	agctactaatgacc	tgggtccgcaggtccagggaagggtggagtggatcgga
Ab10.H3	gaatcgacctcaat	agctactaatgacc	tgggtccgcaggtccagggaagggtggagtggatcgga
Ab10.H4	gaatcgacctcaat	agctactaatgacc	tgggtccgcaggtccagggaagggtggagtggatcgga
Ab10.H5	gaatcgacctcaat	agctactaatgacc	tgggtccgcaggtccagggaagggtggagtggatcgga
Ab10.H6	gaatcgacctcaat	agctactaatgacc	tgggtccgcaggtccagggaagggtggagtggatcgga
Ab21.H2	gaatcgacctcagt	agctactaatgacc	tgggtccgcaggtccagggaagggtggagtggatcgga
Ab21.H3	gaatcgacctcagt	agctactaatgacc	tgggtccgcaggtccagggaagggtggagtggatcgga
Ab21.H4	gaatcgacctcagt	agctactaatgacc	tgggtccgcaggtccagggaagggtggagtggatcgga

Figure 3C
Antibody Heavy chain DNA features

Sequence	CDR2	FR3
Ab10	ttcattgatgctggtgtagcgatactactacgagctgggcgaaaggc	cgattcaccatctctccaaaaacctcga
Ab20	ttcattgatgctggtgtagcgatactactacgagctgggcgaaaggc	cgattcaccatctctccaaaaacctcga
Ab21	ttcattgatgctggtgtagcgatactactacgagctgggcgaaaggc	cgattcaccatctctccaaaaacctcga
Ab22	ttcattgatgctggtgtagcgatactactacgagctgggcgaaaggc	cgattcaccatctctccaaaaacctcga
Ab23	ttcattgatgctggtgtagcgatactactacgagctgggcgaaaggc	cgattcaccatctctccaaaaacctcga
Ab10.H	ttcattgatgctggtgtagcgatactactacgagctgggcgaaaggc	cgattcaccatctctccaaaaacctcga
Ab21.H	ttcattgatgctggtgtagcgatactactacgagctgggcgaaaggc	cgattcaccatctctccaaaaacctcga
Ab10.H2	ttcattgatgctggtgtagcgatactactacgagctgggcgaaaggc	cgattcaccatctctccaaaaacctcga
Ab10.H3	ttcattgatgctggtgtagcgatactactacgagctgggcgaaaggc	cgattcaccatctctccaaaaacctcga
Ab10.H4	ttcattgatgctggtgtagcgatactactacgagctgggcgaaaggc	cgattcaccatctctccaaaaacctcga
Ab10.H5	ttcattgatgctggtgtagcgatactactacgagctgggcgaaaggc	cgattcaccatctctccaaaaacctcga
Ab10.H6	ttcattgatgctggtgtagcgatactactacgagctgggcgaaaggc	cgattcaccatctctccaaaaacctcga
Ab21.H2	ttcattgatgctggtgtagcgatactactacgagctgggcgaaaggc	cgattcaccatctctccaaaaacctcga
Ab21.H3	ttcattgatgctggtgtagcgatactactacgagctgggcgaaaggc	cgattcaccatctctccaaaaacctcga
Ab21.H4	ttcattgatgctggtgtagcgatactactacgagctgggcgaaaggc	cgattcaccatctctccaaaaacctcga

Figure 3D
Antibody Heavy chain DNA features

Sequence	FR3
Name	
Ab10	ccacggtggatctgaaatccacgctccgacacacgagagacacggccacotattctctgtgpcaga
Ab20	ccacggtggatctgaaatccacgctccgacacacgagagacacggccacotattctctgtgpcaga
Ab21	ccacggtggatctgaaatccacgctccgacacacgagagacacggccacotattctctgtgpcaga
Ab22	cgccacggtgactctgcataatgacacgctctgacacgctccgacacgacacotattctctgtgpcaga
Ab23	ccacggtggatctgaaatgacacgctctgacacgctccgacacgacacotattctctgtactaga
Ab10.H	ccaagaaacacggtgatcttcaaatgaacagcctgagagctgagagacactgctgtgtattctctgtactaga
Ab21.H	ccaagaaacacggtgatcttcaaatgaacagcctgagagctgagagacactgctgtgtattctctgtactaga
Ab10.H2	ccaagaaacacggtgatcttcaaatgaacagcctgagagctgagagacactgctgtgtattctctgtactaga
Ab10.H3	ccaagaaacacggtgatcttcaaatgaacagcctgagagctgagagacactgctgtgtattctctgtactaga
Ab10.H4	ccaagaaacacggtgatcttcaaatgaacagcctgagagctgagagacactgctgtgtattctctgtactaga
Ab10.H5	ccaagaaacacggtgatcttcaaatgaacagcctgagagctgagagacactgctgtgtattctctgtactaga
Ab10.H6	ccaagaaacacggtgatcttcaaatgaacagcctgagagctgagagacactgctgtgtattctctgtactaga
Ab21.H2	ccaagaaacacggtgatcttcaaatgaacagcctgagagctgagagacactgctgtgtattctctgtactaga
Ab21.H3	ccaagaaacacggtgatcttcaaatgaacagcctgagagctgagagacactgctgtgtattctctgtactaga
Ab21.H4	ccaagaaacacggtgatcttcaaatgaacagcctgagagctgagagacactgctgtgtattctctgtactaga

Figure 3E
Antibody Heavy chain DNA features

Sequence	CDR3	FR4
Name		
Ab10	gatcttgacttg	tggggccaggggacccctggtcacccgtctcagac
Ab20	gatcttgacttg	tggggccaggggacccctggtcacccgtctcagac
Ab21	gatcttgacttg	tggggccaggggacccctggtcacccgtctcagac
Ab22	gatcttgacttg	tggggccaggggacccctggtcacccgtctcagac
Ab23	gatcttgacttg	tggggccaggggacccctggtcacccgtctcagac
Ab10.H	gatcttgacttg	tggggccaggggacccctggtcacccgtctcagac
Ab21.H	gatcttgacttg	tggggccaggggacccctggtcacccgtctcagac
Ab10.H2	gatcttgacttg	tggggccaggggacccctggtcacccgtctcagac
Ab10.H3	gatcttgacttg	tggggccaggggacccctggtcacccgtctcagac
Ab10.H4	gatcttgacttg	tggggccaggggacccctggtcacccgtctcagac
Ab10.H5	gatcttgacttg	tggggccaggggacccctggtcacccgtctcagac
Ab10.H6	gatcttgacttg	tggggccaggggacccctggtcacccgtctcagac
Ab21.H2	gatcttgacttg	tggggccaggggacccctggtcacccgtctcagac
Ab21.H3	gatcttgacttg	tggggccaggggacccctggtcacccgtctcagac
Ab21.H4	gatcttgacttg	tggggccaggggacccctggtcacccgtctcagac

Figure 3F
Antibody Heavy chain DNA features

Sequence	Constant region
Ab10	gcctccaccaggggcccatcggttttcccccctggcaccctctctccaaagagacacctctgggggacacagcgccctgg
Ab20	gcctccaccaggggcccatcggttttcccccctggcaccctctctccaaagagacacctctgggggacacagcgccctgg
Ab21	gcctccaccaggggcccatcggttttcccccctggcaccctctctccaaagagacacctctgggggacacagcgccctgg
Ab22	gcctccaccaggggcccatcggttttcccccctggcaccctctctccaaagagacacctctgggggacacagcgccctgg
Ab23	gcctccaccaggggcccatcggttttcccccctggcaccctctctccaaagagacacctctgggggacacagcgccctgg
Ab10.H	gcctccaccaggggcccatcggttttcccccctggcaccctctctccaaagagacacctctgggggacacagcgccctgg
Ab21.H	gcctccaccaggggcccatcggttttcccccctggcaccctctctccaaagagacacctctgggggacacagcgccctgg
Ab10.H2	gcctccaccaggggcccatcggttttcccccctggcaccctctctccaaagagacacctctgggggacacagcgccctgg
Ab10.H3	gcctccaccaggggcccatcggttttcccccctggcaccctctctccaaagagacacctctgggggacacagcgccctgg
Ab10.H4	gcctccaccaggggcccatcggttttcccccctggcaccctctctccaaagagacacctctgggggacacagcgccctgg
Ab10.H5	gcctccaccaggggcccatcggttttcccccctggcaccctctctccaaagagacacctctgggggacacagcgccctgg
Ab10.H6	gcctccaccaggggcccatcggttttcccccctggcaccctctctccaaagagacacctctgggggacacagcgccctgg
Ab21.H2	gcctccaccaggggcccatcggttttcccccctggcaccctctctccaaagagacacctctgggggacacagcgccctgg
Ab21.H3	gcctccaccaggggcccatcggttttcccccctggcaccctctctccaaagagacacctctgggggacacagcgccctgg
Ab21.H4	gcctccaccaggggcccatcggttttcccccctggcaccctctctccaaagagacacctctgggggacacagcgccctgg

Figure 3G
Antibody Heavy chain DNA features

Sequence	Constant region
Ab10	gctgctgtgtcaaggactacttcccggaaacgggtgacgggtgtcgtgggaactcaggggccctgaccacagcgccgtgc
Ab20	gctgctgtgtcaaggactacttcccggaaacgggtgacgggtgtcgtgggaactcaggggccctgaccacagcgccgtgc
Ab21	gctgctgtgtcaaggactacttcccggaaacgggtgacgggtgtcgtgggaactcaggggccctgaccacagcgccgtgc
Ab22	gctgctgtgtcaaggactacttcccggaaacgggtgacgggtgtcgtgggaactcaggggccctgaccacagcgccgtgc
Ab23	gctgctgtgtcaaggactacttcccggaaacgggtgacgggtgtcgtgggaactcaggggccctgaccacagcgccgtgc
Ab10.H	gctgctgtgtcaaggactacttcccggaaacgggtgacgggtgtcgtgggaactcaggggccctgaccacagcgccgtgc
Ab21.H	gctgctgtgtcaaggactacttcccggaaacgggtgacgggtgtcgtgggaactcaggggccctgaccacagcgccgtgc
Ab10.H2	gctgctgtgtcaaggactacttcccggaaacgggtgacgggtgtcgtgggaactcaggggccctgaccacagcgccgtgc
Ab10.H3	gctgctgtgtcaaggactacttcccggaaacgggtgacgggtgtcgtgggaactcaggggccctgaccacagcgccgtgc
Ab10.H4	gctgctgtgtcaaggactacttcccggaaacgggtgacgggtgtcgtgggaactcaggggccctgaccacagcgccgtgc
Ab10.H5	gctgctgtgtcaaggactacttcccggaaacgggtgacgggtgtcgtgggaactcaggggccctgaccacagcgccgtgc
Ab10.H6	gctgctgtgtcaaggactacttcccggaaacgggtgacgggtgtcgtgggaactcaggggccctgaccacagcgccgtgc
Ab21.H2	gctgctgtgtcaaggactacttcccggaaacgggtgacgggtgtcgtgggaactcaggggccctgaccacagcgccgtgc
Ab21.H3	gctgctgtgtcaaggactacttcccggaaacgggtgacgggtgtcgtgggaactcaggggccctgaccacagcgccgtgc
Ab21.H4	gctgctgtgtcaaggactacttcccggaaacgggtgacgggtgtcgtgggaactcaggggccctgaccacagcgccgtgc

Figure 3H

Antibody Heavy chain DNA features

Sequence	Constant region
Name	
Ab10	acaccttcocgggtgttcctacagtcctcaggaactctactcctcctcagcagcgtggtagccgtgccctccacagcgt
Ab20	acaccttcocgggtgttcctacagtcctcaggaactctactcctcctcagcagcgtggtagccgtgccctccacagcgt
Ab21	acaccttcocgggtgttcctacagtcctcaggaactctactcctcctcagcagcgtggtagccgtgccctccacagcgt
Ab22	acaccttcocgggtgttcctacagtcctcaggaactctactcctcctcagcagcgtggtagccgtgccctccacagcgt
Ab23	acaccttcocgggtgttcctacagtcctcaggaactctactcctcctcagcagcgtggtagccgtgccctccacagcgt
Ab10.H	acaccttcocgggtgttcctacagtcctcaggaactctactcctcctcagcagcgtggtagccgtgccctccacagcgt
Ab21.H	acaccttcocgggtgttcctacagtcctcaggaactctactcctcctcagcagcgtggtagccgtgccctccacagcgt
Ab10.H2	acaccttcocgggtgttcctacagtcctcaggaactctactcctcctcagcagcgtggtagccgtgccctccacagcgt
Ab10.H3	acaccttcocgggtgttcctacagtcctcaggaactctactcctcctcagcagcgtggtagccgtgccctccacagcgt
Ab10.H4	acaccttcocgggtgttcctacagtcctcaggaactctactcctcctcagcagcgtggtagccgtgccctccacagcgt
Ab10.H5	acaccttcocgggtgttcctacagtcctcaggaactctactcctcctcagcagcgtggtagccgtgccctccacagcgt
Ab10.H6	acaccttcocgggtgttcctacagtcctcaggaactctactcctcctcagcagcgtggtagccgtgccctccacagcgt
Ab21.H2	acaccttcocgggtgttcctacagtcctcaggaactctactcctcctcagcagcgtggtagccgtgccctccacagcgt
Ab21.H3	acaccttcocgggtgttcctacagtcctcaggaactctactcctcctcagcagcgtggtagccgtgccctccacagcgt
Ab21.H4	acaccttcocgggtgttcctacagtcctcaggaactctactcctcctcagcagcgtggtagccgtgccctccacagcgt

Figure 3I

Antibody Heavy chain DNA features

Sequence	Constant region
Name	
Ab10	tgggcacccagacctacatctgcaacgtggaatcacaaagcccccagcagcaacacccaaaggtggagcgcagaggttgagcccca
Ab20	tgggcacccagacctacatctgcaacgtggaatcacaaagcccccagcagcaacacccaaaggtggagcgcagaggttgagcccca
Ab21	tgggcacccagacctacatctgcaacgtggaatcacaaagcccccagcagcaacacccaaaggtggagcgcagaggttgagcccca
Ab22	tgggcacccagacctacatctgcaacgtggaatcacaaagcccccagcagcaacacccaaaggtggagcgcagaggttgagcccca
Ab23	tgggcacccagacctacatctgcaacgtggaatcacaaagcccccagcagcaacacccaaaggtggagcgcagaggttgagcccca
Ab10.H	tgggcacccagacctacatctgcaacgtggaatcacaaagcccccagcagcaacacccaaaggtggagcgcagaggttgagcccca
Ab21.H	tgggcacccagacctacatctgcaacgtggaatcacaaagcccccagcagcaacacccaaaggtggagcgcagaggttgagcccca
Ab10.H2	tgggcacccagacctacatctgcaacgtggaatcacaaagcccccagcagcaacacccaaaggtggagcgcagaggttgagcccca
Ab10.H3	tgggcacccagacctacatctgcaacgtggaatcacaaagcccccagcagcaacacccaaaggtggagcgcagaggttgagcccca
Ab10.H4	tgggcacccagacctacatctgcaacgtggaatcacaaagcccccagcagcaacacccaaaggtggagcgcagaggttgagcccca
Ab10.H5	tgggcacccagacctacatctgcaacgtggaatcacaaagcccccagcagcaacacccaaaggtggagcgcagaggttgagcccca
Ab10.H6	tgggcacccagacctacatctgcaacgtggaatcacaaagcccccagcagcaacacccaaaggtggagcgcagaggttgagcccca
Ab21.H2	tgggcacccagacctacatctgcaacgtggaatcacaaagcccccagcagcaacacccaaaggtggagcgcagaggttgagcccca
Ab21.H3	tgggcacccagacctacatctgcaacgtggaatcacaaagcccccagcagcaacacccaaaggtggagcgcagaggttgagcccca
Ab21.H4	tgggcacccagacctacatctgcaacgtggaatcacaaagcccccagcagcaacacccaaaggtggagcgcagaggttgagcccca

Figure 3J
Antibody Heavy chain DNA features

Sequence Name	Constant region
Ab10	aatcttgtgacaaaactcacacatgccacogtgcacagacactgaactcctgggggacgtcagctcttcctct
Ab20	aatcttgtgacaaaactcacacatgccacogtgcacagacactgaactcctgggggacgtcagctcttcctct
Ab21	aatcttgtgacaaaactcacacatgccacogtgcacagacactgaactcctgggggacgtcagctcttcctct
Ab22	aatcttgtgacaaaactcacacatgccacogtgcacagacactgaactcctgggggacgtcagctcttcctct
Ab23	aatcttgtgacaaaactcacacatgccacogtgcacagacactgaactcctgggggacgtcagctcttcctct
Ab10.H	aatcttgtgacaaaactcacacatgccacogtgcacagacactgaactcctgggggacgtcagctcttcctct
Ab21.H	aatcttgtgacaaaactcacacatgccacogtgcacagacactgaactcctgggggacgtcagctcttcctct
Ab10.H2	aatcttgtgacaaaactcacacatgccacogtgcacagacactgaactcctgggggacgtcagctcttcctct
Ab10.H3	aatcttgtgacaaaactcacacatgccacogtgcacagacactgaactcctgggggacgtcagctcttcctct
Ab10.H4	aatcttgtgacaaaactcacacatgccacogtgcacagacactgaactcctgggggacgtcagctcttcctct
Ab10.H5	aatcttgtgacaaaactcacacatgccacogtgcacagacactgaactcctgggggacgtcagctcttcctct
Ab10.H6	aatcttgtgacaaaactcacacatgccacogtgcacagacactgaactcctgggggacgtcagctcttcctct
Ab21.H2	aatcttgtgacaaaactcacacatgccacogtgcacagacactgaactcctgggggacgtcagctcttcctct
Ab21.H3	aatcttgtgacaaaactcacacatgccacogtgcacagacactgaactcctgggggacgtcagctcttcctct
Ab21.H4	aatcttgtgacaaaactcacacatgccacogtgcacagacactgaactcctgggggacgtcagctcttcctct

Figure 3K
Antibody Heavy chain DNA features

Sequence Name	Constant region
Ab10	tcccccaaaacccaaggacacccctcatgatctccggacccctgaggtcacatcgtggtggtggaogtgagcc
Ab20	tcccccaaaacccaaggacacccctcatgatctccggacccctgaggtcacatcgtggtggtggaogtgagcc
Ab21	tcccccaaaacccaaggacacccctcatgatctccggacccctgaggtcacatcgtggtggtggaogtgagcc
Ab22	tcccccaaaacccaaggacacccctcatgatctccggacccctgaggtcacatcgtggtggtggaogtgagcc
Ab23	tcccccaaaacccaaggacacccctcatgatctccggacccctgaggtcacatcgtggtggtggaogtgagcc
Ab10.H	tcccccaaaacccaaggacacccctcatgatctccggacccctgaggtcacatcgtggtggtggaogtgagcc
Ab21.H	tcccccaaaacccaaggacacccctcatgatctccggacccctgaggtcacatcgtggtggtggaogtgagcc
Ab10.H2	tcccccaaaacccaaggacacccctcatgatctccggacccctgaggtcacatcgtggtggtggaogtgagcc
Ab10.H3	tcccccaaaacccaaggacacccctcatgatctccggacccctgaggtcacatcgtggtggtggaogtgagcc
Ab10.H4	tcccccaaaacccaaggacacccctcatgatctccggacccctgaggtcacatcgtggtggtggaogtgagcc
Ab10.H5	tcccccaaaacccaaggacacccctcatgatctccggacccctgaggtcacatcgtggtggtggaogtgagcc
Ab10.H6	tcccccaaaacccaaggacacccctcatgatctccggacccctgaggtcacatcgtggtggtggaogtgagcc
Ab21.H2	tcccccaaaacccaaggacacccctcatgatctccggacccctgaggtcacatcgtggtggtggaogtgagcc
Ab21.H3	tcccccaaaacccaaggacacccctcatgatctccggacccctgaggtcacatcgtggtggtggaogtgagcc
Ab21.H4	tcccccaaaacccaaggacacccctcatgatctccggacccctgaggtcacatcgtggtggtggaogtgagcc

Figure 3L

Antibody Heavy chain DNA features

Sequence

Name	Constant region
Ab10	acgaagacccctgaggtccaagttcaactggtacatggacgctgagaggtgcataatgccaaagacaagaacgcgcggg
Ab20	acgaagacccctgaggtccaagttcaactggtacatggacgctgagaggtgcataatgccaaagacaagaacgcgcggg
Ab21	acgaagacccctgaggtccaagttcaactggtacatggacgctgagaggtgcataatgccaaagacaagaacgcgcggg
Ab22	acgaagacccctgaggtccaagttcaactggtacatggacgctgagaggtgcataatgccaaagacaagaacgcgcggg
Ab23	acgaagacccctgaggtccaagttcaactggtacatggacgctgagaggtgcataatgccaaagacaagaacgcgcggg
Ab10.H	acgaagacccctgaggtccaagttcaactggtacatggacgctgagaggtgcataatgccaaagacaagaacgcgcggg
Ab21.H	acgaagacccctgaggtccaagttcaactggtacatggacgctgagaggtgcataatgccaaagacaagaacgcgcggg
Ab10.H2	acgaagacccctgaggtccaagttcaactggtacatggacgctgagaggtgcataatgccaaagacaagaacgcgcggg
Ab10.H3	acgaagacccctgaggtccaagttcaactggtacatggacgctgagaggtgcataatgccaaagacaagaacgcgcggg
Ab10.H4	acgaagacccctgaggtccaagttcaactggtacatggacgctgagaggtgcataatgccaaagacaagaacgcgcggg
Ab10.H5	acgaagacccctgaggtccaagttcaactggtacatggacgctgagaggtgcataatgccaaagacaagaacgcgcggg
Ab10.H6	acgaagacccctgaggtccaagttcaactggtacatggacgctgagaggtgcataatgccaaagacaagaacgcgcggg
Ab21.H2	acgaagacccctgaggtccaagttcaactggtacatggacgctgagaggtgcataatgccaaagacaagaacgcgcggg
Ab21.H3	acgaagacccctgaggtccaagttcaactggtacatggacgctgagaggtgcataatgccaaagacaagaacgcgcggg
Ab21.H4	acgaagacccctgaggtccaagttcaactggtacatggacgctgagaggtgcataatgccaaagacaagaacgcgcggg

Figure 3M

Antibody Heavy chain DNA features

Sequence

Name	Constant region
Ab10	aggaagcagtaacgccagcacgtaccgtgtgtgtcagcgctcctcacgctcctgcacacaggaactggctgaattggcaagg
Ab20	aggaagcagtaacgccagcacgtaccgtgtgtgtcagcgctcctcacgctcctgcacacaggaactggctgaattggcaagg
Ab21	aggaagcagtaacgccagcacgtaccgtgtgtgtcagcgctcctcacgctcctgcacacaggaactggctgaattggcaagg
Ab22	aggaagcagtaacgccagcacgtaccgtgtgtgtcagcgctcctcacgctcctgcacacaggaactggctgaattggcaagg
Ab23	aggaagcagtaacgccagcacgtaccgtgtgtgtcagcgctcctcacgctcctgcacacaggaactggctgaattggcaagg
Ab10.H	aggaagcagtaacgccagcacgtaccgtgtgtgtcagcgctcctcacgctcctgcacacaggaactggctgaattggcaagg
Ab21.H	aggaagcagtaacgccagcacgtaccgtgtgtgtcagcgctcctcacgctcctgcacacaggaactggctgaattggcaagg
Ab10.H2	aggaagcagtaacgccagcacgtaccgtgtgtgtcagcgctcctcacgctcctgcacacaggaactggctgaattggcaagg
Ab10.H3	aggaagcagtaacgccagcacgtaccgtgtgtgtcagcgctcctcacgctcctgcacacaggaactggctgaattggcaagg
Ab10.H4	aggaagcagtaacgccagcacgtaccgtgtgtgtcagcgctcctcacgctcctgcacacaggaactggctgaattggcaagg
Ab10.H5	aggaagcagtaacgccagcacgtaccgtgtgtgtcagcgctcctcacgctcctgcacacaggaactggctgaattggcaagg
Ab10.H6	aggaagcagtaacgccagcacgtaccgtgtgtgtcagcgctcctcacgctcctgcacacaggaactggctgaattggcaagg
Ab21.H2	aggaagcagtaacgccagcacgtaccgtgtgtgtcagcgctcctcacgctcctgcacacaggaactggctgaattggcaagg
Ab21.H3	aggaagcagtaacgccagcacgtaccgtgtgtgtcagcgctcctcacgctcctgcacacaggaactggctgaattggcaagg
Ab21.H4	aggaagcagtaacgccagcacgtaccgtgtgtgtcagcgctcctcacgctcctgcacacaggaactggctgaattggcaagg

Figure 3N
Antibody Heavy chain DNA features

Sequence	Constant region
Ab10	agtcacagtgcaaggtctccacaaagccctccagccccccatcgagaaaccattctccaaagccaaagggcagc
Ab20	agtcacagtgcaaggtctccacaaagccctccagccccccatcgagaaaccattctccaaagccaaagggcagc
Ab21	agtcacagtgcaaggtctccacaaagccctccagccccccatcgagaaaccattctccaaagccaaagggcagc
Ab22	agtcacagtgcaaggtctccacaaagccctccagccccccatcgagaaaccattctccaaagccaaagggcagc
Ab23	agtcacagtgcaaggtctccacaaagccctccagccccccatcgagaaaccattctccaaagccaaagggcagc
Ab10.H	agtcacagtgcaaggtctccacaaagccctccagccccccatcgagaaaccattctccaaagccaaagggcagc
Ab21.H	agtcacagtgcaaggtctccacaaagccctccagccccccatcgagaaaccattctccaaagccaaagggcagc
Ab10.H2	agtcacagtgcaaggtctccacaaagccctccagccccccatcgagaaaccattctccaaagccaaagggcagc
Ab10.H3	agtcacagtgcaaggtctccacaaagccctccagccccccatcgagaaaccattctccaaagccaaagggcagc
Ab10.H4	agtcacagtgcaaggtctccacaaagccctccagccccccatcgagaaaccattctccaaagccaaagggcagc
Ab10.H5	agtcacagtgcaaggtctccacaaagccctccagccccccatcgagaaaccattctccaaagccaaagggcagc
Ab10.H6	agtcacagtgcaaggtctccacaaagccctccagccccccatcgagaaaccattctccaaagccaaagggcagc
Ab21.H2	agtcacagtgcaaggtctccacaaagccctccagccccccatcgagaaaccattctccaaagccaaagggcagc
Ab21.H3	agtcacagtgcaaggtctccacaaagccctccagccccccatcgagaaaccattctccaaagccaaagggcagc
Ab21.H4	agtcacagtgcaaggtctccacaaagccctccagccccccatcgagaaaccattctccaaagccaaagggcagc

Figure 3O
Antibody Heavy chain DNA features

Sequence	Constant region
Ab10	cccgagaaaccacaggtgtacacccctgccccccatcccgaggaggagatgacccaagaaaccaggtcagcctgccc
Ab20	cccgagaaaccacaggtgtacacccctgccccccatcccgaggaggagatgacccaagaaaccaggtcagcctgccc
Ab21	cccgagaaaccacaggtgtacacccctgccccccatcccgaggaggagatgacccaagaaaccaggtcagcctgccc
Ab22	cccgagaaaccacaggtgtacacccctgccccccatcccgaggaggagatgacccaagaaaccaggtcagcctgccc
Ab23	cccgagaaaccacaggtgtacacccctgccccccatcccgaggaggagatgacccaagaaaccaggtcagcctgccc
Ab10.H	cccgagaaaccacaggtgtacacccctgccccccatcccgaggaggagatgacccaagaaaccaggtcagcctgccc
Ab21.H	cccgagaaaccacaggtgtacacccctgccccccatcccgaggaggagatgacccaagaaaccaggtcagcctgccc
Ab10.H2	cccgagaaaccacaggtgtacacccctgccccccatcccgaggaggagatgacccaagaaaccaggtcagcctgccc
Ab10.H3	cccgagaaaccacaggtgtacacccctgccccccatcccgaggaggagatgacccaagaaaccaggtcagcctgccc
Ab10.H4	cccgagaaaccacaggtgtacacccctgccccccatcccgaggaggagatgacccaagaaaccaggtcagcctgccc
Ab10.H5	cccgagaaaccacaggtgtacacccctgccccccatcccgaggaggagatgacccaagaaaccaggtcagcctgccc
Ab10.H6	cccgagaaaccacaggtgtacacccctgccccccatcccgaggaggagatgacccaagaaaccaggtcagcctgccc
Ab21.H2	cccgagaaaccacaggtgtacacccctgccccccatcccgaggaggagatgacccaagaaaccaggtcagcctgccc
Ab21.H3	cccgagaaaccacaggtgtacacccctgccccccatcccgaggaggagatgacccaagaaaccaggtcagcctgccc
Ab21.H4	cccgagaaaccacaggtgtacacccctgccccccatcccgaggaggagatgacccaagaaaccaggtcagcctgccc

Figure 3P

Antibody Heavy chain DNA features		
Sequence		
Name	Constant region	
Ab10	tggccaaggcttctatcccagcgacatcgccgtggagtggagagcaatggggcagccggagagaacaactacaaga	
Ab20	tggccaaggcttctatcccagcgacatcgccgtggagtggagagcaatggggcagccggagagaacaactacaaga	
Ab21	tggccaaggcttctatcccagcgacatcgccgtggagtggagagcaatggggcagccggagagaacaactacaaga	
Ab22	tggccaaggcttctatcccagcgacatcgccgtggagtggagagcaatggggcagccggagagaacaactacaaga	
Ab23	tggccaaggcttctatcccagcgacatcgccgtggagtggagagcaatggggcagccggagagaacaactacaaga	
Ab10.H	tggccaaggcttctatcccagcgacatcgccgtggagtggagagcaatggggcagccggagagaacaactacaaga	
Ab21.H	tggccaaggcttctatcccagcgacatcgccgtggagtggagagcaatggggcagccggagagaacaactacaaga	
Ab10.H2	tggccaaggcttctatcccagcgacatcgccgtggagtggagagcaatggggcagccggagagaacaactacaaga	
Ab10.H3	tggccaaggcttctatcccagcgacatcgccgtggagtggagagcaatggggcagccggagagaacaactacaaga	
Ab10.H4	tggccaaggcttctatcccagcgacatcgccgtggagtggagagcaatggggcagccggagagaacaactacaaga	
Ab10.H5	tggccaaggcttctatcccagcgacatcgccgtggagtggagagcaatggggcagccggagagaacaactacaaga	
Ab10.H6	tggccaaggcttctatcccagcgacatcgccgtggagtggagagcaatggggcagccggagagaacaactacaaga	
Ab21.H2	tggccaaggcttctatcccagcgacatcgccgtggagtggagagcaatggggcagccggagagaacaactacaaga	
Ab21.H3	tggccaaggcttctatcccagcgacatcgccgtggagtggagagcaatggggcagccggagagaacaactacaaga	
Ab21.H4	tggccaaggcttctatcccagcgacatcgccgtggagtggagagcaatggggcagccggagagaacaactacaaga	

Figure 3Q

Antibody Heavy chain DNA features		
Sequence		
Name	Constant region	
Ab10	ccacgctcccggtgtggaactccgacgggtctcttctctctacagcaagctcacogtggacaagagcaggtggc	
Ab20	ccacgctcccggtgtggaactccgacgggtctcttctctctacagcaagctcacogtggacaagagcaggtggc	
Ab21	ccacgctcccggtgtggaactccgacgggtctcttctctctacagcaagctcacogtggacaagagcaggtggc	
Ab22	ccacgctcccggtgtggaactccgacgggtctcttctctctacagcaagctcacogtggacaagagcaggtggc	
Ab23	ccacgctcccggtgtggaactccgacgggtctcttctctctacagcaagctcacogtggacaagagcaggtggc	
Ab10.H	ccacgctcccggtgtggaactccgacgggtctcttctctctacagcaagctcacogtggacaagagcaggtggc	
Ab21.H	ccacgctcccggtgtggaactccgacgggtctcttctctctacagcaagctcacogtggacaagagcaggtggc	
Ab10.H2	ccacgctcccggtgtggaactccgacgggtctcttctctctacagcaagctcacogtggacaagagcaggtggc	
Ab10.H3	ccacgctcccggtgtggaactccgacgggtctcttctctctacagcaagctcacogtggacaagagcaggtggc	
Ab10.H4	ccacgctcccggtgtggaactccgacgggtctcttctctctacagcaagctcacogtggacaagagcaggtggc	
Ab10.H5	ccacgctcccggtgtggaactccgacgggtctcttctctctacagcaagctcacogtggacaagagcaggtggc	
Ab10.H6	ccacgctcccggtgtggaactccgacgggtctcttctctctacagcaagctcacogtggacaagagcaggtggc	
Ab21.H2	ccacgctcccggtgtggaactccgacgggtctcttctctctacagcaagctcacogtggacaagagcaggtggc	
Ab21.H3	ccacgctcccggtgtggaactccgacgggtctcttctctctacagcaagctcacogtggacaagagcaggtggc	
Ab21.H4	ccacgctcccggtgtggaactccgacgggtctcttctctctacagcaagctcacogtggacaagagcaggtggc	

Figure 3R
Antibody Heavy chain DNA features

Sequence Name	Constant region
Ab10	agcaggggaacgtctctctcatgtctccgtgatgcatgaggtctgtgacaaaccactacacgcgaagaagagctctctccc
Ab20	agcaggggaacgtctctctcatgtctccgtgatgcatgaggtctgtgacaaaccactacacgcgaagaagagctctctccc
Ab21	agcaggggaacgtctctctcatgtctccgtgatgcatgaggtctgtgacaaaccactacacgcgaagaagagctctctccc
Ab22	agcaggggaacgtctctctcatgtctccgtgatgcatgaggtctgtgacaaaccactacacgcgaagaagagctctctccc
Ab23	agcaggggaacgtctctctcatgtctccgtgatgcatgaggtctgtgacaaaccactacacgcgaagaagagctctctccc
Ab10.H	agcaggggaacgtctctctcatgtctccgtgatgcatgaggtctgtgacaaaccactacacgcgaagaagagctctctccc
Ab21.H	agcaggggaacgtctctctcatgtctccgtgatgcatgaggtctgtgacaaaccactacacgcgaagaagagctctctccc
Ab10.H2	agcaggggaacgtctctctcatgtctccgtgatgcatgaggtctgtgacaaaccactacacgcgaagaagagctctctccc
Ab10.H3	agcaggggaacgtctctctcatgtctccgtgatgcatgaggtctgtgacaaaccactacacgcgaagaagagctctctccc
Ab10.H4	agcaggggaacgtctctctcatgtctccgtgatgcatgaggtctgtgacaaaccactacacgcgaagaagagctctctccc
Ab10.H5	agcaggggaacgtctctctcatgtctccgtgatgcatgaggtctgtgacaaaccactacacgcgaagaagagctctctccc
Ab10.H6	agcaggggaacgtctctctcatgtctccgtgatgcatgaggtctgtgacaaaccactacacgcgaagaagagctctctccc
Ab21.H2	agcaggggaacgtctctctcatgtctccgtgatgcatgaggtctgtgacaaaccactacacgcgaagaagagctctctccc
Ab21.H3	agcaggggaacgtctctctcatgtctccgtgatgcatgaggtctgtgacaaaccactacacgcgaagaagagctctctccc
Ab21.H4	agcaggggaacgtctctctcatgtctccgtgatgcatgaggtctgtgacaaaccactacacgcgaagaagagctctctccc

Figure 3S
Antibody Heavy chain DNA features

Sequence Name	Constant region
Ab10	tgctccgggtaaa (SEQ ID NO: 411)
Ab20	tgctccgggtaaa (SEQ ID NO: 451)
Ab21	tgctccgggtaaa (SEQ ID NO: 851)
Ab22	tgctccgggtaaa (SEQ ID NO: 891)
Ab23	tgctccgggtaaa (SEQ ID NO: 931)
Ab10.H	tgctccgggtaaa (SEQ ID NO: 971)
Ab21.H	tgctccgggtaaa (SEQ ID NO: 1211)
Ab10.H2	tgctccgggtaaa (SEQ ID NO: 1291)
Ab10.H3	tgctccgggtaaa (SEQ ID NO: 1331)
Ab10.H4	tgctccgggtaaa (SEQ ID NO: 1371)
Ab10.H5	tgctccgggtaaa (SEQ ID NO: 1411)
Ab10.H6	tgctccgggtaaa (SEQ ID NO: 1451)
Ab21.H2	tgctccgggtaaa (SEQ ID NO: 1491)
Ab21.H3	tgctccgggtaaa (SEQ ID NO: 1531)
Ab21.H4	tgctccgggtaaa (SEQ ID NO: 1571)

Figure 4A
Antibody Light chain DNA features

Sequence	FR1
Name	
Ab10	gcgcgcgtgctgaaccagactccatctctccgtgtctgcagctgtgggagggcacacagtcacacatcaattgc
Ab20	gcgcgcgtgctgaaccagactccatctctccgtgtctgcagctgtgggagggcacacagtcacacatcaattgc
Ab21	gcgcgcgtgctgaaccagactccatctctccgtgtctgcagctgtgggagggcacacagtcacacatcaattgc
Ab22	gcgcgcgtgctgaaccagactccatctctccgtgtctgcagctgtgggagggcacacagtcacacatcaattgc
Ab23	gcgcgcgtgctgaaccagactccatctctccgtgtctgcagctgtgggagggcacacagtcacacatcaattgc
Ab10.H	gcgcgcgtgctgaaccagactccatctctccgtgtctgcagctgtgggagggcacacagtcacacatcaattgc
Ab21.H	gcgcgcgtgctgaaccagactccatctctccgtgtctgcagctgtgggagggcacacagtcacacatcaattgc
Ab10.H2	gcgcgcgtgctgaaccagactccatctctccgtgtctgcagctgtgggagggcacacagtcacacatcaattgc
Ab10.H3	gcgcgcgtgctgaaccagactccatctctccgtgtctgcagctgtgggagggcacacagtcacacatcaattgc
Ab10.H4	gcgcgcgtgctgaaccagactccatctctccgtgtctgcagctgtgggagggcacacagtcacacatcaattgc
Ab10.H5	gcgcgcgtgctgaaccagactccatctctccgtgtctgcagctgtgggagggcacacagtcacacatcaattgc
Ab10.H6	gcgcgcgtgctgaaccagactccatctctccgtgtctgcagctgtgggagggcacacagtcacacatcaattgc
Ab21.H2	gcgcgcgtgctgaaccagactccatctctccgtgtctgcagctgtgggagggcacacagtcacacatcaattgc
Ab21.H3	gcgcgcgtgctgaaccagactccatctctccgtgtctgcagctgtgggagggcacacagtcacacatcaattgc
Ab21.H4	gcgcgcgtgctgaaccagactccatctctccgtgtctgcagctgtgggagggcacacagtcacacatcaattgc

Figure 4B
Antibody Light chain DNA features

Sequence	CDR1	FR2
Name		
Ab10	cagtcacagtgaagagtggtttacaggttaactacttagcc	tggttttcagcagaaacccagggcagcctcccaagctcc
Ab20	cagtcacagtgaagagtggtttacaggttaactacttagcc	tggttttcagcagaaacccagggcagcctcccaagctcc
Ab21	cagtcacagtgaagagtggtttacaggttaactacttagcc	tggttttcagcagaaacccagggcagcctcccaagctcc
Ab22	cagtcacagtgaagagtggtttacaggttaactacttagcc	tggttttcagcagaaacccagggcagcctcccaagctcc
Ab23	cagtcacagtgaagagtggtttacaggttaactacttagcc	tggttttcagcagaaacccagggcagcctcccaagctcc
Ab10.H	cagtcacagtgaagagtggtttacaggttaactacttagcc	tggttttcagcagaaacccagggcagcctcccaagctcc
Ab21.H	cagtcacagtgaagagtggtttacaggttaactacttagcc	tggttttcagcagaaacccagggcagcctcccaagctcc
Ab10.H2	cagtcacagtgaagagtggtttacaggttaactacttagcc	tggttttcagcagaaacccagggcagcctcccaagctcc
Ab10.H3	cagtcacagtgaagagtggtttacaggttaactacttagcc	tggttttcagcagaaacccagggcagcctcccaagctcc
Ab10.H4	cagtcacagtgaagagtggtttacaggttaactacttagcc	tggttttcagcagaaacccagggcagcctcccaagctcc
Ab10.H5	cagtcacagtgaagagtggtttacaggttaactacttagcc	tggttttcagcagaaacccagggcagcctcccaagctcc
Ab10.H6	cagtcacagtgaagagtggtttacaggttaactacttagcc	tggttttcagcagaaacccagggcagcctcccaagctcc
Ab21.H2	cagtcacagtgaagagtggtttacaggttaactacttagcc	tggttttcagcagaaacccagggcagcctcccaagctcc
Ab21.H3	cagtcacagtgaagagtggtttacaggttaactacttagcc	tggttttcagcagaaacccagggcagcctcccaagctcc
Ab21.H4	cagtcacagtgaagagtggtttacaggttaactacttagcc	tggttttcagcagaaacccagggcagcctcccaagctcc

Figure 4E

Antibody Light chain DNA features

Sequence	Name	CDR3	FR4	Constant region
Ab10	Ab10	ttgct	ttcggcgaggagacgaggtggtggtcaaacgt	acggtaggggccccatctgtcttca
Ab20	Ab20	ttgct	ttcggcgaggagacgaggtggtggtcaaacgt	acggtaggggccccatctgtcttca
Ab21	Ab21	ttgct	ttcggcgaggagacgaggtggtggtcaaacgt	acggtaggggccccatctgtcttca
Ab22	Ab22	atacgcattt	ttcggcgaggagacgaggtggtggtcaaacgt	acggtaggggccccatctgtcttca
Ab23	Ab23	ctggtatggttcgct	ttcggcgaggagacgaggtggtggtcaaacgt	acggtaggggccccatctgtcttca
Ab10.H	Ab10.H	ttgct	ttcggcgaggagacgaggtggtggtcaaacgt	acggtaggggccccatctgtcttca
Ab21.H	Ab21.H	ttgct	ttcggcgaggagacgaggtggtggtcaaacgt	acggtaggggccccatctgtcttca
Ab10.H2	Ab10.H2	ttgct	ttcggcgaggagacgaggtggtggtcaaacgt	acggtaggggccccatctgtcttca
Ab10.H3	Ab10.H3	ttgct	ttcggcgaggagacgaggtggtggtcaaacgt	acggtaggggccccatctgtcttca
Ab10.H4	Ab10.H4	ttgct	ttcggcgaggagacgaggtggtggtcaaacgt	acggtaggggccccatctgtcttca
Ab10.H5	Ab10.H5	ttgct	ttcggcgaggagacgaggtggtggtcaaacgt	acggtaggggccccatctgtcttca
Ab10.H6	Ab10.H6	ttgct	ttcggcgaggagacgaggtggtggtcaaacgt	acggtaggggccccatctgtcttca
Ab21.H2	Ab21.H2	ttgct	ttcggcgaggagacgaggtggtggtcaaacgt	acggtaggggccccatctgtcttca
Ab21.H3	Ab21.H3	ttgct	ttcggcgaggagacgaggtggtggtcaaacgt	acggtaggggccccatctgtcttca
Ab21.H4	Ab21.H4	ttgct	ttcggcgaggagacgaggtggtggtcaaacgt	acggtaggggccccatctgtcttca

Figure 4F

Antibody Light chain DNA features

Sequence	Name	Constant region
Ab10	Ab10	tcttcocgccatctgatgagcagttgaaatctggaaactgctctgtgtgtgtgctgtgataaacttttatccca
Ab20	Ab20	tcttcocgccatctgatgagcagttgaaatctggaaactgctctgtgtgtgtgtgctgtgataaacttttatccca
Ab21	Ab21	tcttcocgccatctgatgagcagttgaaatctggaaactgctctgtgtgtgtgtgctgtgataaacttttatccca
Ab22	Ab22	tcttcocgccatctgatgagcagttgaaatctggaaactgctctgtgtgtgtgtgctgtgataaacttttatccca
Ab10.H	Ab10.H	tcttcocgccatctgatgagcagttgaaatctggaaactgctctgtgtgtgtgtgctgtgataaacttttatccca
Ab21.H	Ab21.H	tcttcocgccatctgatgagcagttgaaatctggaaactgctctgtgtgtgtgtgctgtgataaacttttatccca
Ab10.H2	Ab10.H2	tcttcocgccatctgatgagcagttgaaatctggaaactgctctgtgtgtgtgtgctgtgataaacttttatccca
Ab10.H3	Ab10.H3	tcttcocgccatctgatgagcagttgaaatctggaaactgctctgtgtgtgtgtgctgtgataaacttttatccca
Ab10.H4	Ab10.H4	tcttcocgccatctgatgagcagttgaaatctggaaactgctctgtgtgtgtgtgctgtgataaacttttatccca
Ab10.H5	Ab10.H5	tcttcocgccatctgatgagcagttgaaatctggaaactgctctgtgtgtgtgtgctgtgataaacttttatccca
Ab10.H6	Ab10.H6	tcttcocgccatctgatgagcagttgaaatctggaaactgctctgtgtgtgtgtgctgtgataaacttttatccca
Ab21.H2	Ab21.H2	tcttcocgccatctgatgagcagttgaaatctggaaactgctctgtgtgtgtgtgctgtgataaacttttatccca
Ab21.H3	Ab21.H3	tcttcocgccatctgatgagcagttgaaatctggaaactgctctgtgtgtgtgtgctgtgataaacttttatccca
Ab21.H4	Ab21.H4	tcttcocgccatctgatgagcagttgaaatctggaaactgctctgtgtgtgtgtgctgtgataaacttttatccca

Figure 4G

Antibody Light chain DNA features		
Sequence	Constant region	
Name		
Ab10	gagaggccaaagtacagtggaagggtggataacggccctccaatcgggttaactccagagagagtggtcacacagagcagg	
Ab20	gagaggccaaagtacagtggaagggtggataacggccctccaatcgggttaactccagagagagtggtcacacagagcagg	
Ab21	gagaggccaaagtacagtggaagggtggataacggccctccaatcgggttaactccagagagagtggtcacacagagcagg	
Ab22	gagaggccaaagtacagtggaagggtggataacggccctccaatcgggttaactccagagagagtggtcacacagagcagg	
Ab23	gagaggccaaagtacagtggaagggtggataacggccctccaatcgggttaactccagagagagtggtcacacagagcagg	
Ab10.H	gagaggccaaagtacagtggaagggtggataacggccctccaatcgggttaactccagagagagtggtcacacagagcagg	
Ab21.H	gagaggccaaagtacagtggaagggtggataacggccctccaatcgggttaactccagagagagtggtcacacagagcagg	
Ab10.H2	gagaggccaaagtacagtggaagggtggataacggccctccaatcgggttaactccagagagagtggtcacacagagcagg	
Ab10.H3	gagaggccaaagtacagtggaagggtggataacggccctccaatcgggttaactccagagagagtggtcacacagagcagg	
Ab10.H4	gagaggccaaagtacagtggaagggtggataacggccctccaatcgggttaactccagagagagtggtcacacagagcagg	
Ab10.H5	gagaggccaaagtacagtggaagggtggataacggccctccaatcgggttaactccagagagagtggtcacacagagcagg	
Ab10.H6	gagaggccaaagtacagtggaagggtggataacggccctccaatcgggttaactccagagagagtggtcacacagagcagg	
Ab21.H2	gagaggccaaagtacagtggaagggtggataacggccctccaatcgggttaactccagagagagtggtcacacagagcagg	
Ab21.H3	gagaggccaaagtacagtggaagggtggataacggccctccaatcgggttaactccagagagagtggtcacacagagcagg	
Ab21.H4	gagaggccaaagtacagtggaagggtggataacggccctccaatcgggttaactccagagagagtggtcacacagagcagg	

Figure 4H

Antibody Light chain DNA features		
Sequence	Constant region	
Name		
Ab10	acagcaaggacagcacctacagcctcagcagcacccctgacgctgagccaagcagactacgagaaacacacaaagtctct	
Ab20	acagcaaggacagcacctacagcctcagcagcacccctgacgctgagccaagcagactacgagaaacacacaaagtctct	
Ab21	acagcaaggacagcacctacagcctcagcagcacccctgacgctgagccaagcagactacgagaaacacacaaagtctct	
Ab22	acagcaaggacagcacctacagcctcagcagcacccctgacgctgagccaagcagactacgagaaacacacaaagtctct	
Ab23	acagcaaggacagcacctacagcctcagcagcacccctgacgctgagccaagcagactacgagaaacacacaaagtctct	
Ab10.H	acagcaaggacagcacctacagcctcagcagcacccctgacgctgagccaagcagactacgagaaacacacaaagtctct	
Ab21.H	acagcaaggacagcacctacagcctcagcagcacccctgacgctgagccaagcagactacgagaaacacacaaagtctct	
Ab10.H2	acagcaaggacagcacctacagcctcagcagcacccctgacgctgagccaagcagactacgagaaacacacaaagtctct	
Ab10.H3	acagcaaggacagcacctacagcctcagcagcacccctgacgctgagccaagcagactacgagaaacacacaaagtctct	
Ab10.H4	acagcaaggacagcacctacagcctcagcagcacccctgacgctgagccaagcagactacgagaaacacacaaagtctct	
Ab10.H5	acagcaaggacagcacctacagcctcagcagcacccctgacgctgagccaagcagactacgagaaacacacaaagtctct	
Ab10.H6	acagcaaggacagcacctacagcctcagcagcacccctgacgctgagccaagcagactacgagaaacacacaaagtctct	
Ab21.H2	acagcaaggacagcacctacagcctcagcagcacccctgacgctgagccaagcagactacgagaaacacacaaagtctct	
Ab21.H3	acagcaaggacagcacctacagcctcagcagcacccctgacgctgagccaagcagactacgagaaacacacaaagtctct	
Ab21.H4	acagcaaggacagcacctacagcctcagcagcacccctgacgctgagccaagcagactacgagaaacacacaaagtctct	

Figure 4I

Antibody Light chain DNA features

Sequence	Constant region
Name	
Ab10	acgctcggaagtcacccatcacccatcacggcctgagctcgccgtcacaaagagcttcacacaggagagagtggt
Ab20	acgctcggaagtcacccatcacccatcacggcctgagctcgccgtcacaaagagcttcacacaggagagagtggt
Ab21	acgctcggaagtcacccatcacccatcacggcctgagctcgccgtcacaaagagcttcacacaggagagagtggt
Ab22	acgctcggaagtcacccatcacccatcacggcctgagctcgccgtcacaaagagcttcacacaggagagagtggt
Ab23	acgctcggaagtcacccatcacccatcacggcctgagctcgccgtcacaaagagcttcacacaggagagagtggt
Ab10.H	acgctcggaagtcacccatcacccatcacggcctgagctcgccgtcacaaagagcttcacacaggagagagtggt
Ab21.H	acgctcggaagtcacccatcacccatcacggcctgagctcgccgtcacaaagagcttcacacaggagagagtggt
Ab10.H2	acgctcggaagtcacccatcacccatcacggcctgagctcgccgtcacaaagagcttcacacaggagagagtggt
Ab10.H3	acgctcggaagtcacccatcacccatcacggcctgagctcgccgtcacaaagagcttcacacaggagagagtggt
Ab10.H4	acgctcggaagtcacccatcacccatcacggcctgagctcgccgtcacaaagagcttcacacaggagagagtggt
Ab10.H5	acgctcggaagtcacccatcacccatcacggcctgagctcgccgtcacaaagagcttcacacaggagagagtggt
Ab10.H6	acgctcggaagtcacccatcacccatcacggcctgagctcgccgtcacaaagagcttcacacaggagagagtggt
Ab21.H2	acgctcggaagtcacccatcacccatcacggcctgagctcgccgtcacaaagagcttcacacaggagagagtggt
Ab21.H3	acgctcggaagtcacccatcacccatcacggcctgagctcgccgtcacaaagagcttcacacaggagagagtggt
Ab21.H4	acgctcggaagtcacccatcacccatcacggcctgagctcgccgtcacaaagagcttcacacaggagagagtggt

Figure 4J

Antibody Light chain DNA features

Sequence	Constant region
Name	
Ab10	(SEQ ID NO: 431)
Ab20	(SEQ ID NO: 471)
Ab21	(SEQ ID NO: 871)
Ab22	(SEQ ID NO: 911)
Ab23	(SEQ ID NO: 951)
Ab10.H	(SEQ ID NO: 991)
Ab21.H	(SEQ ID NO: 1231)
Ab10.H2	(SEQ ID NO: 1311)
Ab10.H3	(SEQ ID NO: 1351)
Ab10.H4	(SEQ ID NO: 1391)
Ab10.H5	(SEQ ID NO: 1431)
Ab10.H6	(SEQ ID NO: 1471)
Ab21.H2	(SEQ ID NO: 1511)
Ab21.H3	(SEQ ID NO: 1551)
Ab21.H4	(SEQ ID NO: 1591)

Figure 5
Antibody Heavy chain protein features

Sequence Name	Variable region coordinates	SEQ ID NO:	CDR1 coordinates	SEQ ID NO:	CDR2 coordinates	SEQ ID NO:	CDR3 coordinates	SEQ ID NO:
Ab10	1-109	402	30-34	404	49-64	406	95-98	408
Ab20	1-109	442	30-34	444	49-64	446	95-98	448
Ab21	1-109	842	30-34	844	49-64	846	95-98	848
Ab22	1-112	882	31-35	884	50-65	886	98-101	888
Ab23	1-117	922	30-34	924	49-64	926	95-106	928
Ab10.H	1-112	962	31-35	964	50-65	966	98-101	968
Ab21.H	1-112	1202	31-35	1204	50-65	1206	98-101	1208
Ab10.H2	1-112	1282	31-35	1284	50-65	1286	98-101	1288
Ab10.H3	1-112	1322	31-35	1324	50-65	1326	98-101	1328
Ab10.H4	1-112	1362	31-35	1364	50-65	1366	98-101	1368
Ab10.H5	1-112	1402	31-35	1404	50-65	1406	98-101	1408
Ab10.H6	1-112	1442	31-35	1444	50-65	1446	98-101	1448
Ab21.H2	1-112	1482	31-35	1484	50-65	1486	98-101	1488
Ab21.H3	1-112	1522	31-35	1524	50-65	1526	98-101	1528
Ab21.H4	1-112	1562	31-35	1564	50-65	1566	98-101	1568

Figure 6
Antibody Heavy chain Protein features

Sequence Name	FR1 coordinates	SEQ ID NO:	FR2 coordinates	SEQ ID NO:	FR3 coordinates	SEQ ID NO:	FR4 coordinates	SEQ ID NO:	Constant region coordinates	SEQ ID NO:
Ab10	1-29	403	35-48	405	65-94	407	99-109	409	110-439	410
Ab20	1-29	443	35-48	445	65-94	447	99-109	449	110-439	450
Ab21	1-29	843	35-48	845	65-94	847	99-109	849	110-439	850
Ab22	1-30	883	36-49	885	67-97	887	102-112	889	113-442	890
Ab23	1-29	923	35-48	925	65-94	927	107-117	929	118-447	930
Ab10.H	1-30	963	36-49	965	66-97	967	102-112	969	113-442	970
Ab21.H	1-30	1203	36-49	1205	66-97	1207	102-112	1209	113-442	1210
Ab10.H2	1-30	1283	36-49	1285	66-97	1287	102-112	1289	113-442	1290
Ab10.H3	1-30	1323	36-49	1325	66-97	1327	102-112	1329	113-442	1330
Ab10.H4	1-30	1363	36-49	1365	66-97	1367	102-112	1369	113-442	1370
Ab10.H5	1-30	1403	36-49	1405	66-97	1407	102-112	1409	113-442	1410
Ab10.H6	1-30	1443	36-49	1445	66-97	1447	102-112	1449	113-442	1450
Ab21.H2	1-30	1483	36-49	1485	66-97	1487	102-112	1489	113-442	1490
Ab21.H3	1-30	1523	36-49	1525	66-97	1527	102-112	1529	113-442	1530
Ab21.H4	1-30	1563	36-49	1565	66-97	1567	102-112	1569	113-442	1570

Figure 7
Antibody Light chain Protein features

Sequence Name	Variable region coordinates	SEQ ID NO:	CDR1 coordinates	SEQ ID NO:	CDR2 coordinates	SEQ ID NO:	CDR3 coordinates	SEQ ID NO:
Ab10	1-110	422	24-35	424	51-57	426	90-99	428
Ab20	1-110	462	24-35	464	51-57	466	90-99	468
Ab21	1-110	862	24-35	864	51-57	866	90-99	868
Ab22	1-113	902	24-36	904	52-58	906	91-102	908
Ab23	1-113	942	24-34	944	50-56	946	89-102	948
Ab10.H	1-110	982	24-35	984	51-57	986	90-99	988
Ab21.H	1-110	1222	24-35	1224	51-57	1226	90-99	1228
Ab10.H2	1-109	1302	23-34	1304	50-56	1306	89-98	1308
Ab10.H3	1-110	1342	24-35	1344	51-57	1346	90-99	1348
Ab10.H4	1-110	1382	24-35	1384	51-57	1386	90-99	1388
Ab10.H5	1-108	1422	22-33	1424	49-55	1426	88-97	1428
Ab10.H6	1-109	1462	23-34	1464	50-56	1466	89-98	1468
Ab21.H2	1-109	1502	23-34	1504	50-56	1506	89-98	1508
Ab21.H3	1-110	1542	24-35	1544	51-57	1546	90-99	1548
Ab21.H4	1-110	1582	24-35	1584	51-57	1586	90-99	1588

Figure 8
Antibody Light chain Protein features

Sequence Name	FR1 coordinates	SEQ ID NO:	FR2 coordinates	SEQ ID NO:	FR3 coordinates	SEQ ID NO:	FR4 coordinates	SEQ ID NO:	Constant region coordinates	SEQ ID NO:
Ab10	1-23	423	36-50	425	58-89	427	100-110	429	111-216	430
Ab20	1-23	463	36-50	465	58-89	467	100-110	469	111-216	470
Ab21	1-23	863	36-50	865	58-89	867	100-110	869	111-216	870
Ab22	1-23	903	37-51	905	59-90	907	103-113	909	114-219	910
Ab23	1-23	943	35-49	945	57-88	947	103-113	949	114-219	950
Ab10.H	1-23	983	36-50	985	58-89	987	100-110	989	111-216	990
Ab21.H	1-23	1223	36-50	1225	58-89	1227	100-110	1229	111-216	1230
Ab10.H2	1-22	1303	35-49	1305	57-88	1307	99-109	1309	110-215	1310
Ab10.H3	1-23	1343	36-50	1345	58-89	1347	100-110	1349	111-216	1350
Ab10.H4	1-23	1383	36-50	1385	58-89	1387	100-110	1389	111-216	1390
Ab10.H5	1-21	1423	34-48	1425	56-87	1427	98-108	1429	109-214	1430
Ab10.H6	1-22	1463	35-49	1465	57-88	1467	99-109	1469	110-215	1470
Ab21.H2	1-22	1503	35-49	1505	57-88	1507	99-109	1509	110-215	1510
Ab21.H3	1-23	1543	36-50	1545	58-89	1547	100-110	1549	111-216	1550
Ab21.H4	1-23	1583	36-50	1585	58-89	1587	100-110	1589	111-216	1590

Figure 9
Antibody Heavy chain DNA features

Sequence Name	Variable region coordinates	SEQ ID NO:	CDR1 coordinates	SEQ ID NO:	CDR2 coordinates	SEQ ID NO:	CDR3 coordinates	SEQ ID NO:
Ab10	1-327	412	88-102	414	145-192	416	283-294	418
Ab20	1-327	452	88-102	454	145-192	456	283-294	458
Ab21	1-327	852	88-102	854	145-192	856	283-294	858
Ab22	1-336	892	91-105	894	148-198	896	292-303	898
Ab23	1-351	932	88-102	934	145-192	936	283-318	938
Ab10.H	1-336	972	91-105	974	148-195	976	292-303	978
Ab21.H	1-336	1212	91-105	1214	148-195	1216	292-303	1218
Ab10.H2	1-336	1292	91-105	1294	148-195	1296	292-303	1298
Ab10.H3	1-336	1332	91-105	1334	148-195	1336	292-303	1338
Ab10.H4	1-336	1372	91-105	1374	148-195	1376	292-303	1378
Ab10.H5	1-336	1412	91-105	1414	148-195	1416	292-303	1418
Ab10.H6	1-336	1452	91-105	1454	148-195	1456	292-303	1458
Ab21.H2	1-336	1492	91-105	1494	148-195	1496	292-303	1498
Ab21.H3	1-336	1532	91-105	1534	148-195	1536	292-303	1538
Ab21.H4	1-336	1572	91-105	1574	148-195	1576	292-303	1578

Figure 10
Antibody Heavy chain DNA features

Sequence Name	FR1 coordinates	SEQ ID NO:	FR2 coordinates	SEQ ID NO:	FR3 coordinates	SEQ ID NO:	FR4 coordinates	SEQ ID NO:	Constant region coordinates	SEQ ID NO:
Ab10	1-87	413	103-144	415	193-282	417	295-327	419	328-1317	420
Ab20	1-87	453	103-144	455	193-282	457	295-327	459	328-1317	460
Ab21	1-87	853	103-144	855	193-282	857	295-327	859	328-1317	860
Ab22	1-90	893	106-147	895	199-291	897	304-336	899	337-1326	900
Ab23	1-87	933	103-144	935	193-282	937	319-351	939	352-1341	940
Ab10.H	1-90	973	106-147	975	196-291	977	304-336	979	337-1326	980
Ab21.H	1-90	1213	106-147	1215	196-291	1217	304-336	1219	337-1326	1220
Ab10.H2	1-90	1293	106-147	1295	196-291	1297	304-336	1299	337-1326	1300
Ab10.H3	1-90	1333	106-147	1335	196-291	1337	304-336	1339	337-1326	1340
Ab10.H4	1-90	1373	106-147	1375	196-291	1377	304-336	1379	337-1326	1380
Ab10.H5	1-90	1413	106-147	1415	196-291	1417	304-336	1419	337-1326	1420
Ab10.H6	1-90	1453	106-147	1455	196-291	1457	304-336	1459	337-1326	1460
Ab21.H2	1-90	1493	106-147	1495	196-291	1497	304-336	1499	337-1326	1500
Ab21.H3	1-90	1533	106-147	1535	196-291	1537	304-336	1539	337-1326	1540
Ab21.H4	1-90	1573	106-147	1575	196-291	1577	304-336	1579	337-1326	1580

Figure 11
Antibody Light chain DNA features

Sequence Name	Variable region coordinates	SEQ ID NO:	CDR1 coordinates	SEQ ID NO:	CDR2 coordinates	SEQ ID NO:	CDR3 coordinates	SEQ ID NO:
Ab10	1-330	432	70-105	434	151-171	436	268-297	438
Ab20	1-330	472	70-105	474	151-171	476	268-297	478
Ab21	1-330	872	70-105	874	151-171	876	268-297	878
Ab22	1-339	912	70-108	914	154-174	916	271-306	918
Ab23	1-339	952	70-102	954	148-168	956	265-306	958
Ab10.H	1-330	992	70-105	994	151-171	996	268-297	998
Ab21.H	1-330	1232	70-105	1234	151-171	1236	268-297	1238
Ab10.H2	1-327	1312	67-102	1314	148-168	1316	265-294	1318
Ab10.H3	1-330	1352	70-105	1354	151-171	1356	268-297	1358
Ab10.H4	1-330	1392	70-105	1394	151-171	1396	268-297	1398
Ab10.H5	1-324	1432	64-99	1434	145-165	1436	262-291	1438
Ab10.H6	1-327	1472	67-102	1474	148-168	1476	265-294	1478
Ab21.H2	1-327	1512	67-102	1514	148-168	1516	265-294	1518
Ab21.H3	1-330	1552	70-105	1554	151-171	1556	268-297	1558
Ab21.H4	1-330	1592	70-105	1594	151-171	1596	268-297	1598

Figure 12
Antibody Light chain DNA features

Sequence Name	FR1 coordinates	SEQ ID NO:	FR2 coordinates	SEQ ID NO:	FR3 coordinates	SEQ ID NO:	FR4 coordinates	SEQ ID NO:	Constant region coordinates	SEQ ID NO:
Ab10	1-69	433	106-150	435	172-267	437	298-330	439	331-648	440
Ab20	1-69	473	106-150	475	172-267	477	298-330	479	331-648	480
Ab21	1-69	873	106-150	875	172-267	877	298-330	879	331-648	880
Ab22	1-69	913	109-153	915	175-270	917	307-339	919	340-657	920
Ab23	1-69	953	103-147	955	169-264	957	307-339	959	340-657	960
Ab10.H	1-69	993	106-150	995	172-267	997	298-330	999	331-648	1000
Ab21.H	1-69	1233	106-150	1235	172-267	1237	298-330	1239	331-648	1240
Ab10.H2	1-66	1313	103-147	1315	169-264	1317	295-327	1319	328-645	1320
Ab10.H3	1-69	1353	106-150	1355	172-267	1357	298-330	1359	331-648	1360
Ab10.H4	1-69	1393	106-150	1395	172-267	1397	298-330	1399	331-648	1400
Ab10.H5	1-63	1433	100-144	1435	166-261	1437	292-324	1439	325-642	1440
Ab10.H6	1-66	1473	103-147	1475	169-264	1477	295-327	1479	328-645	1480
Ab21.H2	1-66	1513	103-147	1515	169-264	1517	295-327	1519	328-645	1520
Ab21.H3	1-69	1553	106-150	1555	172-267	1557	298-330	1559	331-648	1560
Ab21.H4	1-69	1593	106-150	1595	172-267	1597	298-330	1599	331-648	1600

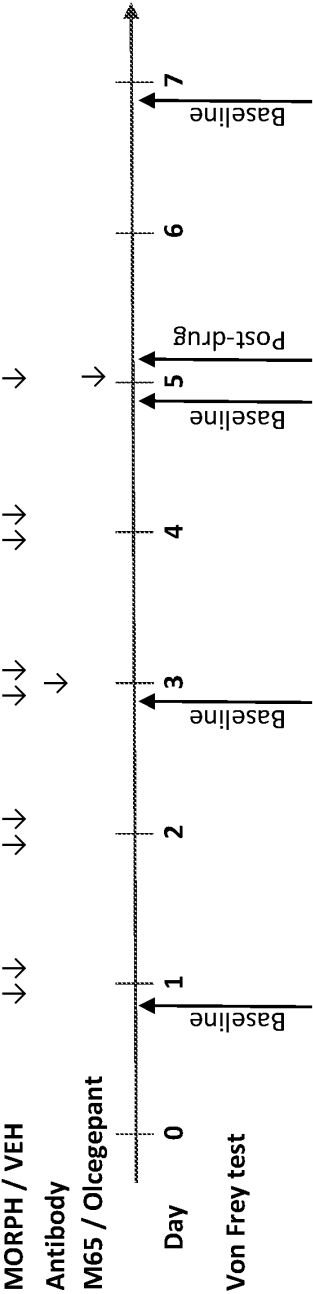


Fig. 13

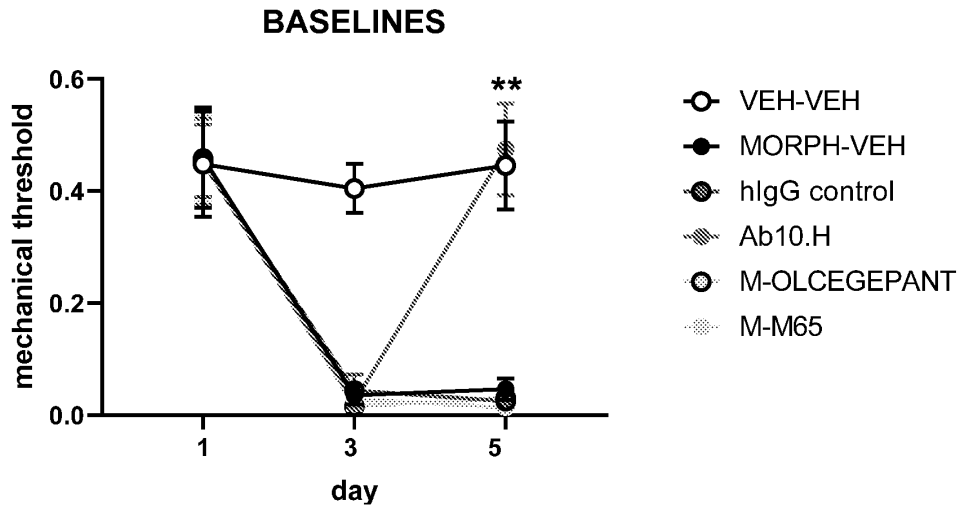


Fig. 14

5

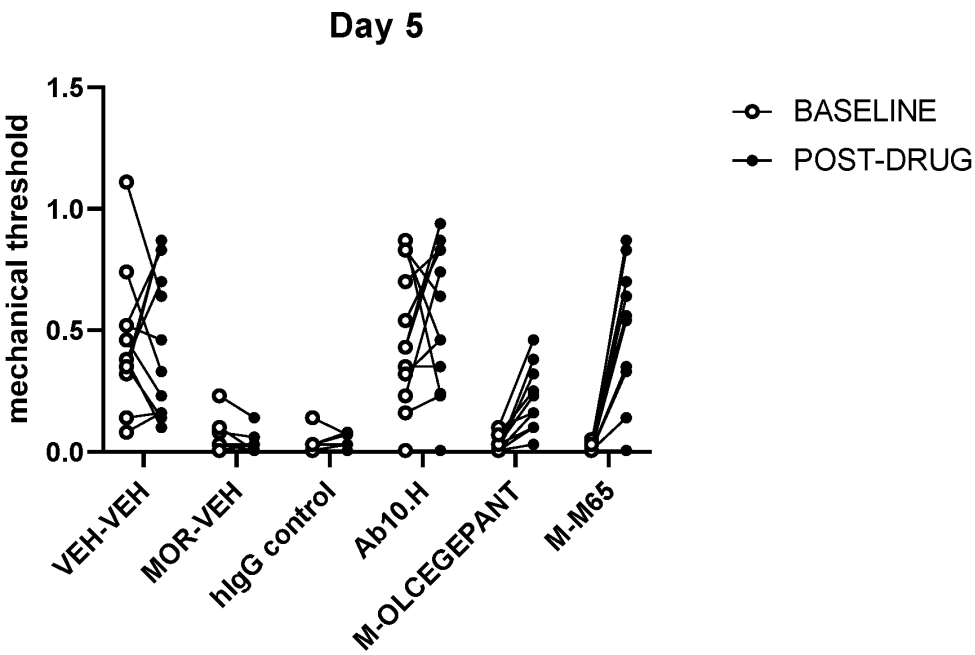


Fig. 15

DAY 5 POST-DRUG

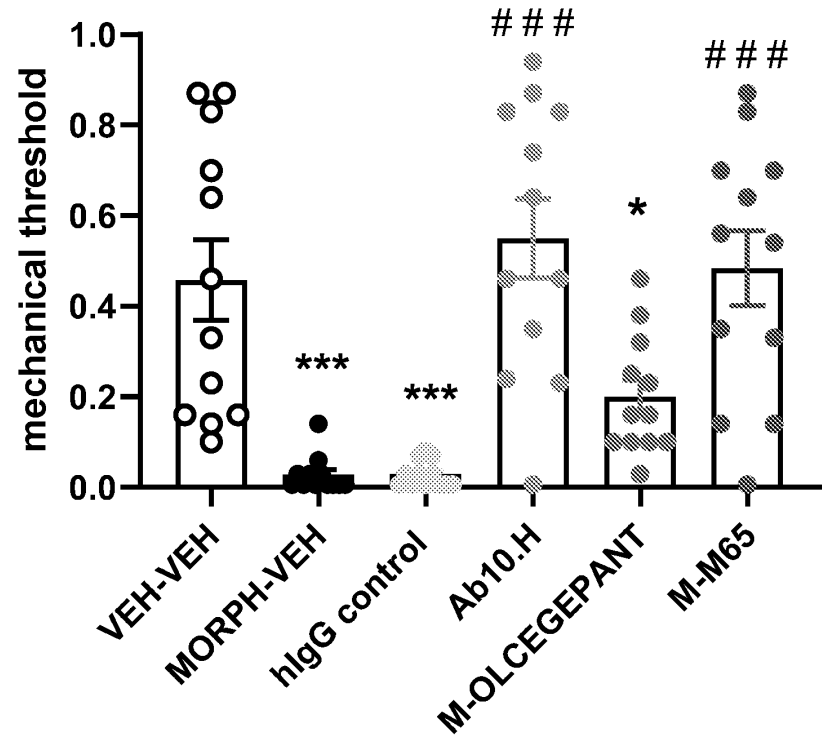


Fig. 16

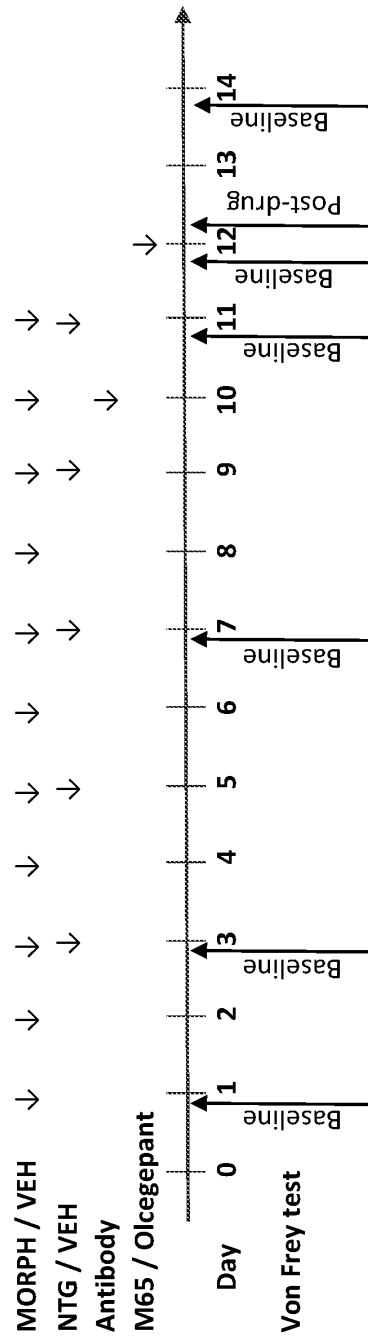


Fig. 17

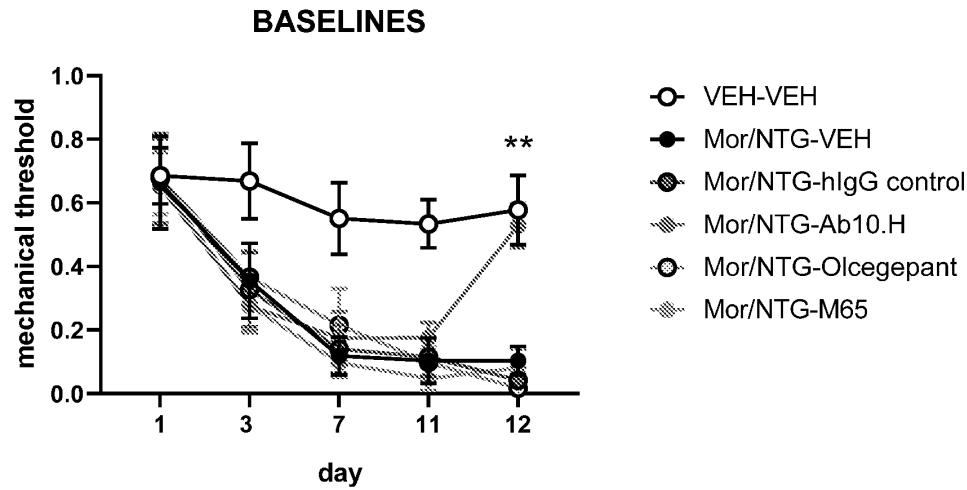


Fig. 18

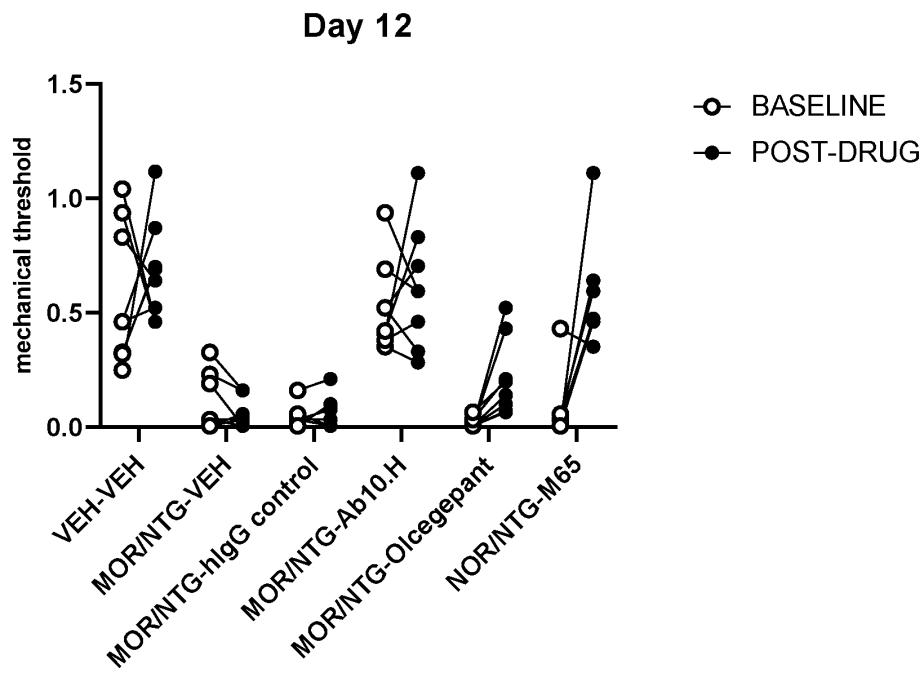


Fig. 19

TEST DAY 12

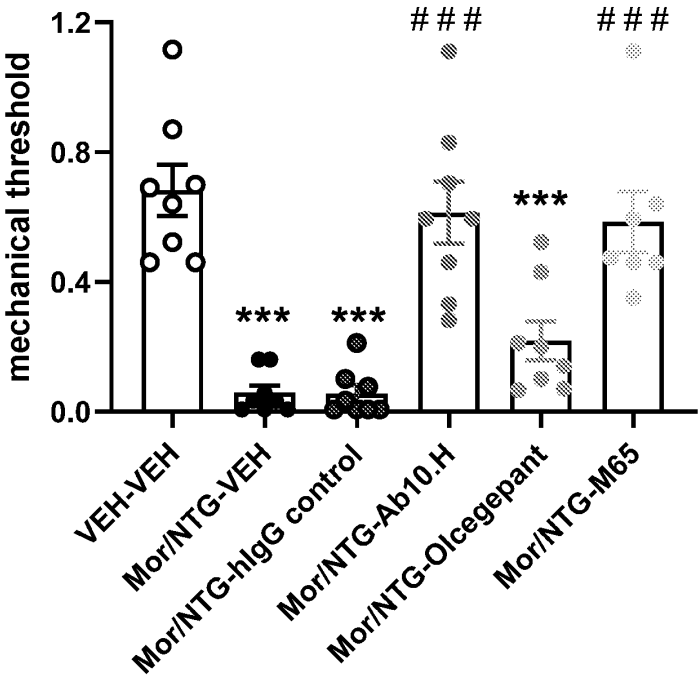


Fig. 20

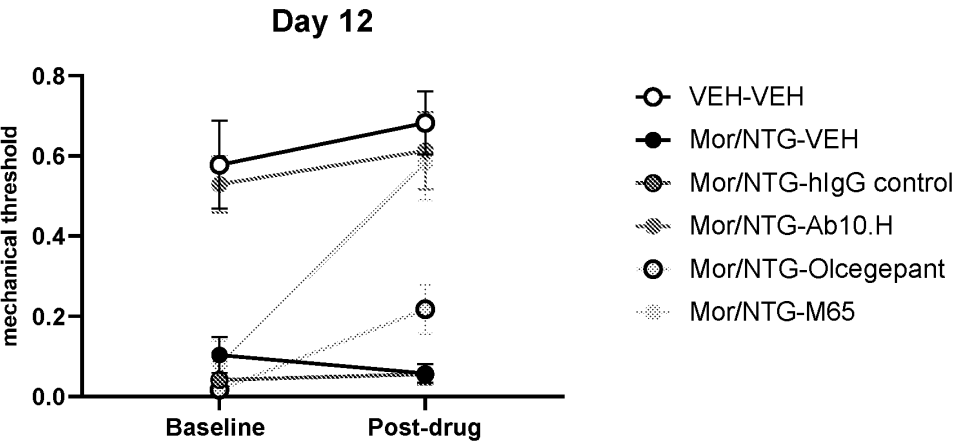


Fig. 21

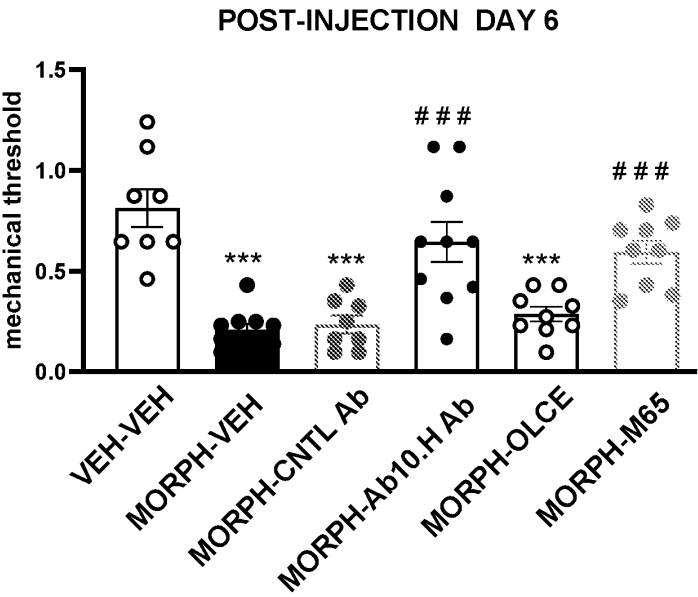
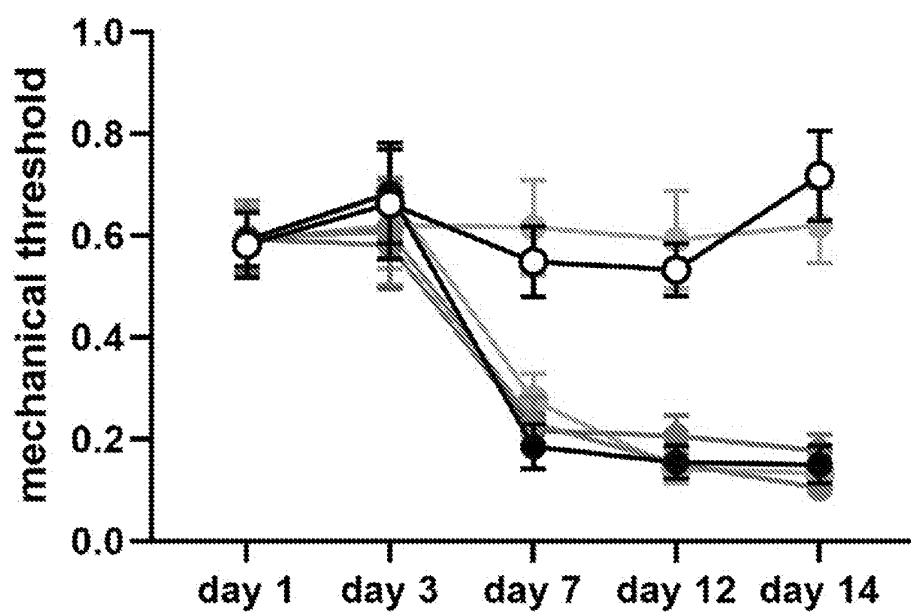


Fig 22

5

10

15



5

10

Fig 23

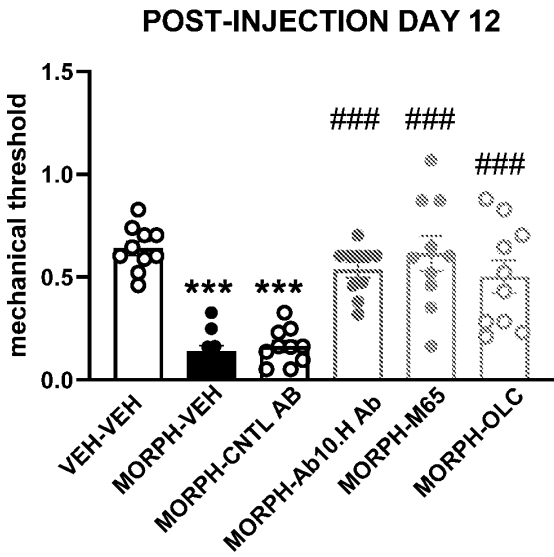


Fig 24