(e.g., a structural or functional variant thereof). In some embodiments, the TCRβ V6 subfamily comprises: TCRβ V6-4*01, TCRβ V6-4*02, TCRβ V6-9*01, TCRβ V6-8*01, TCRβ V6-5*01, TCRβ V6-6*02, TCRβ V6-6*01, TCRβ V6-2*01, TCRβ V6-3*01 or TCRβ V6-1*01. In some embodiments, TCRβV comprises TCRβ V6-5*01, or a variant thereof, e.g., a variant having 85%, 90%, 95%, 99% or more identity the naturally-occurring sequence. TCRβ V6-5*01 is also known as TRBV65; TCRBV6S5; TCRBV13S1, or TCRβ V13.1. The amino acid sequence of TCRβ V6-5*01, *e.g.*, human TCRβ V6-5*01, is known in that art, *e.g.*, as provided by IMGT ID L36092. In some embodiments, TCRβ V6-5*01 is encoded by the nucleic acid sequence of SEQ ID NO: 43, or a sequence having 85%, 90%, 95%, 99% or more identity thereof. In some embodiments, TCRβ V6-5*01 comprises the amino acid sequence of SEQ ID NO: 44, or a sequence having 85%, 90%, 95%, 99% or more identity thereof.

SEQ ID NO: 43

ATGAGCATCGGCCTCCTGTGCTGTGCAGCCTTGTCTCTCCTGTGGGCAGGTCCAGTGAATGCT
GGTGTCACTCAGACCCCAAAATTCCAGGTCCTGAAGACAGGACAGAGCATGACACTGCAGT
GTGCCCAGGATATGAACCATGAATACATGTCCTGGTATCGACAAGACCCAGGCATGGGGCTG
AGGCTGATTCATTACTCAGTTGGTGCTGGTATCACTGACCAAGGAGAAGTCCCCAATGGCTA
CAATGTCTCCAGATCAACCACAGAGGATTTCCCGCTCAGGCTGCTGTCGGCTGCTCCCTCCCA
GACATCTGTGTACTTCTGTGCCAGCAGTTACTC

SEQ ID NO: 44

MSIGLLCCAALSLLWAGPVNAGVTQTPKFQVLKTGQSMTLQCAQDMNHEYMSWYRQDPGMG
LRLIHYSVGAGITDQGEVPNGYNVSRSTTEDFPLRLLSAAPSQTSVYFCASSY

TCR beta V (TCRβV)

[00175] Diversity in the immune system enables protection against a huge array of pathogens. Since the germline genome is limited in size, diversity is achieved not only by the process of V(D)J recombination but also by junctional (junctions between V-D and D-J segments) deletion of nucleotides and addition of pseudo-random, non-templated nucleotides. The TCR beta gene undergoes gene arrangement to generate diversity.

[00176] The TCR V beta repertoire varies between individuals and populations because of, *e.g.*, 7 frequently occurring inactivating polymorphisms in functional gene segments and a large insertion/deletion-related polymorphism encompassing 2 V beta gene segments.

[00177] Provided herein are, inter alia, antibody molecules and fragments thereof, that bind, *e.g.*, specifically bind, to a human TCR beta V chain (TCRβV), *e.g.*, a TCRβV gene family (also referred to as a group), *e.g.*, a TCRβV subfamily (also referred to as a subgroup), *e.g.*, as described herein. TCR beta V families and subfamilies are known in the art, *e.g.*, as described in Yassai et al., (2009) *Immunogenetics* 61(7)pp:493-502; Wei S. and Concannon P. (1994) *Human Immunology* 41(3) pp: 201-206. The antibodies described herein can be recombinant antibodies, *e.g.*, recombinant non-murine antibodies, *e.g.*, recombinant human or humanized antibodies.

Ala330Leu	CDC
Asp270Ala	CDC
Lys322Ala	CDC
Pro329Ala	CDC
Pro331Ala	CDC
Val264Ala	CDC
High mannose glycosylation	CDC
Phe241Ala	CDC
Asn297Ala or Gly or Gln	ADCC; ADCP; CDC
S228P/Phe234Ala/Leu235Ala	ADCC; CDC

Table 21. Exemplary Construct Sequences

mBKM0186			
	SEQ ID NO:		
Chain 1 (heavy chain) (CDRs underlined)	3529	Full Sequence	QVQLQQSGTELMKPGASVKISCKASGYTFSNYWIEWIKQRP GHGLEWVGEILPGAGPTNYNEKFKGKATFTADSSSNTAYM QLSSLTSEDSAVYYCARTDYDYDWFAYWGQGTLVTVSAA KTTAPSVYPLAPVSGDTTGSSVTLGCLVKGYFPEPVTLTWN SGSLSSGVHTFPAVLQSDLYTLSSSVTVTSSTWPSQSITCNVA HPASSTKVDKKIEPKSCDKTHTCPPCPAPNAAGGPSVFIFPPK IKDVLMISLSPIVTCVVVDVSEDDPDVQISWFVNNVEVHTA QTQTHREDYNSTLRVVSALPIQHQDWMSGKEFKCKVNNKD LGAPIERTISKPKGSVRAPQVCVLPPPEEEMTKKQVTLSCAV TDFMPEDIYVEWTNNGKTELNYKNTEPVLDSDGSYFMVSK LRVEKKNWVERNSYSCSVVHEGLHNHHTTKSFSRTPGKEPE A
	3548	Full Sequence without tag	QVQLQQSGTELMKPGASVKISCKASGYTFSNYWIEWIKQRP GHGLEWVGEILPGAGPTNYNEKFKGKATFTADSSSNTAYM QLSSLTSEDSAVYYCARTDYDYDWFAYWGQGTLVTVSAA KTTAPSVYPLAPVSGDTTGSSVTLGCLVKGYFPEPVTLTWN SGSLSSGVHTFPAVLQSDLYTLSSSVTVTSSTWPSQSITCNVA HPASSTKVDKKIEPKSCDKTHTCPPCPAPNAAGGPSVFIFPPK IKDVLMISLSPIVTCVVVDVSEDDPDVQISWFVNNVEVHTA QTQTHREDYNSTLRVVSALPIQHQDWMSGKEFKCKVNNKD LGAPIERTISKPKGSVRAPQVCVLPPPEEEMTKKQVTLSCAV TDFMPEDIYVEWTNNGKTELNYKNTEPVLDSDGSYFMVSK LRVEKKNWVERNSYSCSVVHEGLHNHHTTKSFSRTPGK
	3530	anti-TCRvβ VH from murine MR5-2	QVQLQQSGTELMKPGASVKISCKASGYTFSNYWIEWIKQRP GHGLEWVGEILPGAGPTNYNEKFKGKATFTADSSSNTAYM QLSSLTSEDSAVYYCARTDYDYDWFAYWGQGTLVTVSAA KTTAPSVYPLAPVSGDTTGSSVTLGCLVKGYFPEPVTLTWN SGSLSSGVHTFPAVLQSDLYTLSSSVTVTSS
	3531	mouse Fc heavy chain comprising LALAPG mutations (L234A L235A and P329G)	TWPSQSITCNVAHPASSTKVDKKIEPKSCDKTHTCPPCPAPN AAGGPSVFIFPPKIKDVLMISLSPIVTCVVVDVSEDDPDVQIS WFVNNVEVHTAQTQTHREDYNSTLRVVSALPIQHQDWMS GKEFKCKVNNKDLGAPIERTISKPKGSVRAPQVCVLPPPEEE MTKKQVTLSCAVTDFMPEDIYVEWTNNGKTELNYKNTEPV LDSDGSYFMVSKLRVEKKNWVERNSYSCSVVHEGLHNHHT TKSFSRTPGK
	3547	Tag	EPEA

Chain 2 (IL2-Fc)	3532	Full Sequence	APTSSSTKKTQLQLEHLLLDLQMILNGINNYKNPKLTRMLTF KFYMPKKATELKHLQCLEEELKPLEEVLNLAQSKNFHLRPR DLISNINVIVLELKGSETTFMCEYADETATIVEFLNRWITFCQ SIISTLTGGGGSGGGGSDKTHTCPPCPAPNAAGGPSVFIFPPKI KDVLMISLSPIVTCVVVDVSEDDPDVQISWFVNNVEVHTAQ TQTHREDYNSTLRVVSALPIQHQDWMSGKEFKCKVNNKDL GAPIERTISKPKGSVRAPQVYVLPPCEEEMTKKQVTLWCMV TDFMPEDIYVEWTNNGKTELNYKNTEPVLDSDGSYFMYSK LRVEKKNWVERNSYSCSVVHEGLHNHHTTKSFSRTPGKGG GGSHHHHHHHH
	3549	Full Sequence without tag	APTSSSTKKTQLQLEHLLLDLQMILNGINNYKNPKLTRMLTF KFYMPKKATELKHLQCLEEELKPLEEVLNLAQSKNFHLRPR DLISNINVIVLELKGSETTFMCEYADETATIVEFLNRWITFCQ SIISTLTGGGGSGGGGSDKTHTCPPCPAPNAAGGPSVFIFPPKI KDVLMISLSPIVTCVVVDVSEDDPDVQISWFVNNVEVHTAQ TQTHREDYNSTLRVVSALPIQHQDWMSGKEFKCKVNNKDL GAPIERTISKPKGSVRAPQVYVLPPCEEEMTKKQVTLWCMV TDFMPEDIYVEWTNNGKTELNYKNTEPVLDSDGSYFMYSK LRVEKKNWVERNSYSCSVVHEGLHNHHTTKSFSRTPGK
	2191	IL-2	APTSSSTKKTQLQLEHLLLDLQMILNGINNYKNPKLTRMLTF KFYMPKKATELKHLQCLEEELKPLEEVLNLAQSKNFHLRPR DLISNINVIVLELKGSETTFMCEYADETATIVEFLNRWITFCQ SIISTLT
	3308	linker	GGGGSGGGGS
	3533	mouse Fc heavy chain comprising LALAPG mutations (L234A L235A and P329G)	DKTHTCPPCPAPNAAGGPSVFIFPPKIKDVLMISLSPIVTCVV VDVSEDDPDVQISWFVNNVEVHTAQTQTHREDYNSTLRVV SALPIQHQDWMSGKEFKCKVNNKDLGAPIERTISKPKGSVR APQVYVLPPCEEEMTKKQVTLWCMVTDFMPEDIYVEWTN NGKTELNYKNTEPVLDSDGSYFMYSKLRVEKKNWVERNSY SCSVVHEGLHNHHTTKSFSRTPGK
	3534	Tag	GGGGSHHHHHHHH
Chain 3 (light chain) (CDRs underlined)	3526	Full Sequence	DIVMSQSPSSLAVSVGEKVTMSCKSSQSLLYSGNQKNYLAW YQQKPGQSPKLLIYWASTRESGVPDRFTGSGSGTDFTLTINS VKAEDLTVYYCQQYYGYPRTFGGGTKVEIKRADAAPTVSIF PPSSEQLTSGGASVVCFLNNFYPKDINVKWKIDGSERQNGV LNSWTDQDSKDSTYSMSSTLTLTKDEYERHNSYTCEATHKT STSPIVKSFNRNEC
	3527	anti-TCRvβ VL from murine MR5-2	DIVMSQSPSSLAVSVGEKVTMSCKSSQSLLYSGNQKNYLAW YQQKPGQSPKLLIYWASTRESGVPDRFTGSGSGTDFTLTINS VKAEDLTVYYCQQYYGYPRTFGGGTKVEIK
	3528	Immunoglobulin constant region	RADAAPTVSIFPPSSEQLTSGGASVVCFLNNFYPKDINVKWK IDGSERQNGVLNSWTDQDSKDSTYSMSSTLTLTKDEYERHN SYTCEATHKTSTSPIVKSFNRNEC
mBKM0281			
	SEQ ID NO:		

Chain 1 (heavy chain) (CDRs underlined)	3536	Full Sequence	QVQLQQSGTELMKPGASVKISCKASGYTFSNYWIEWIKQRP GHGLEWVGEILPGAGPTNYNEKFKGKATFTADSSSNTAYM QLSSLTSEDSAVYYCARTDYDYDWFAYWGQGTLVTVSAA KTTAPSVYPLAPVSGDTTGSSVTLGCLVKGYFPEPVTLTWN SGSLSSGVHTFPAVLQSDLYTLSSSVTVTSSTWPSQSITCNV AHPASSTKVDKKIEPKSCDKTHTCPPCPAPNAAGGPSVFIFPP KIKDVLMISLSPIVTCVVVDVSEDDPDVQISWFVNNVEVHT AQTQTHREDYNSTLRVVSALPIQHQDWMSGKEFKCKVNNK DLGAPIERTISKPKGSVRAPQVYVLPPPEEEMTKKQVTLTCM VTDFMPEDIYVEWTNNGKTELNYKNTEPVLDSDGSYFMYS KLRVEKKNWVERNSYSCSVVHEGLHNHHTTKSFSRTPGKE PEA
	3530	anti-TCRvβ VH from murine MR5-2	QVQLQQSGTELMKPGASVKISCKASGYTFSNYWIEWIKQRP GHGLEWVGEILPGAGPTNYNEKFKGKATFTADSSSNTAYM QLSSLTSEDSAVYYCARTDYDYDWFAYWGQGTLVTVSAA KTTAPSVYPLAPVSGDTTGSSVTLGCLVKGYFPEPVTLTWN SGSLSSGVHTFPAVLQSDLYTLSSSVTVTSS
	3537	mouse Fc heavy chain comprising LALAPG mutations (L234A L235A and P329G)	TWPSQSITCNVAHPASSTKVDKKIEPKSCDKTHTCPPCPAPN AAGGPSVFIFPPKIKDVLMISLSPIVTCVVVDVSEDDPDVQIS WFVNNVEVHTAQTQTHREDYNSTLRVVSALPIQHQDWMS GKEFKCKVNNKDLGAPIERTISKPKGSVRAPQVYVLPPPEEE MTKKQVTLTCMVTDFMPEDIYVEWTNNGKTELNYKNTEP VLDSDGSYFMYSKLRVEKKNWVERNSYSCSVVHEGLHNH HTTKSFSRTPGKEPEA
Chain 2 (light chain-IL2) (CDRs underlined)	3535	Full Sequence	DIVMSQSPSSLAVSVGEKVTMSCKSSQSLLYSGNQKNYLA WYQQKPGQSPKLLIYWASTRESGVPDRFTGSGSGTDFTLTI NSVKAEDLTVYYCQQYYGYPRTFGGGTKVEIKRADAAPTV SIFPPSSEQLTSGGASVVCFLNNFYPKDINVKWKIDGSERQN GVLNSWTDQDSKDSTYSMSSTLTLTKDEYERHNSYTCEAT HKTSTSPIVKSFNRNECGGGGSGGGGSGGGGSAPTSSSTKKT QLQLEHLLLDLQMILNGINNYKNPKLTRMLTFKFYMPKKAT ELKHLQCLEEELKPLEEVLNLAQSKNFHLRPRDLISNINVIVL ELKGSETTFMCEYADETATIVEFLNRWITFCQSIISTLT
	3527	anti-TCRvβ VL from murine MR5-2	DIVMSQSPSSLAVSVGEKVTMSCKSSQSLLYSGNQKNYLA WYQQKPGQSPKLLIYWASTRESGVPDRFTGSGSGTDFTLTI NSVKAEDLTVYYCQQYYGYPRTFGGGTKVEIK
	3528	Immunoglobulin constant region	RADAAPTVSIFPPSSEQLTSGGASVVCFLNNFYPKDINVKWK IDGSERQNGVLNSWTDQDSKDSTYSMSSTLTLTKDEYERHN SYTCEATHKTSTSPIVKSFNRNEC
	3309	linker	GGGGSGGGGSGGGGS
	2191	IL-2	APTSSSTKKTQLQLEHLLLDLQMILNGINNYKNPKLTRMLTF KFYMPKKATELKHLQCLEEELKPLEEVLNLAQSKNFHLRPR DLISNINVIVLELKGSETTFMCEYADETATIVEFLNRWITFCQ SIISTLT
Humanized Molecule 1			
	SEQ ID NO:		

Humanized Molecule 2			
	SEQ ID NO:		
Chain 1 (heavy chain) (CDRs underlined)	4000	Full Sequence	QVQLVQSGAEVKKPGSSVKVSCKASGHDFRLTYIHWVRQAPG QGLEWMGRVSAGSGNVKYNEKFKGRVTITADTSTSTAYMELS SLRSEDTAVYYCAVSYYSYDVLDYWGQGTTVTVSSASTKGPS VFPLAPSSKSTSGGTAALGCLVKDYFPEPVTVSWNSGALTSGV HTFPAVLQSSGLYSLSSVVTVPSSSLGTQTYICNVNHKPSNTKV DKRVEPKSCDKTHTCPPCPAPELLGGPSVFLFPPKPKDTLMISR TPEVTCVVVDVSHEDPEVKFNWYVDGVEVHNAKTKPREEQY ASTYRVVSVLTVLHQDWLNGKEYKCKVSNKALPAPIEKTISKA KGQPREPQVCTLPPSREEMTKNQVSLSCAVKGFYPSDIAVEWE SNGQPENNYKTTPPVLDSDGSFFLVSKLTVDKSRWQQGNVFSC SVMHEALHNHYTQKSLSLSP
	1346	anti-TCRvβ VH	QVQLVQSGAEVKKPGSSVKVSCKASGHDFRLTYIHWVRQAPG QGLEWMGRVSAGSGNVKYNEKFKGRVTITADTSTSTAYMELS SLRSEDTAVYYCAVSYYSYDVLDYWGQGTTVTVSS
	4001	Human IgG1 hole cys N297A	ASTKGPSVFPLAPSSKSTSGGTAALGCLVKDYFPEPVTVSWNS GALTSGVHTFPAVLQSSGLYSLSSVVTVPSSSLGTQTYICNVNH KPSNTKVDKRVEPKSCDKTHTCPPCPAPELLGGPSVFLFPPKPK DTLMISRTPEVTCVVVDVSHEDPEVKFNWYVDGVEVHNAKTK PREEQYASTYRVVSVLTVLHQDWLNGKEYKCKVSNKALPAPI EKTISKAKGQPREPQVCTLPPSREEMTKNQVSLSCAVKGFYPS DIAVEWESNGQPENNYKTTPPVLDSDGSFFLVSKLTVDKSRWQ QGNVFSCSVMHEALHNHYTQKSLSLSP
Chain 2 (IL2-Fc)	4002	Full Sequence	APTSSSTKKTQLQLEHLLLDLQMILNGINNYKNPKLTRMLTF KFYMPKKATELKHLQCLEEELKPLEEVLNLAQSKNFHLRPR DLISNINVIVLELKGSETTFMCEYADETATIVEFLNRWITFAQ SIISTLTGGGGSGGGGSDKTHTCPPCPAPELLGGPSVFLFPPK PKDTLMISRTPEVTCVVVDVSHEDPEVKFNWYVDGVEVHN AKTKPREEQYASTYRVVSVLTVLHQDWLNGKEYKCKVSN KALPAPIEKTISKAKGQPREPQVYTLPPCREEMTKNQVSLW CLVKGFYPSDIAVEWESNGQPENNYKTTPPVLDSDGSFFLY SKLTVDKSRWQQGNVFSCSVMHEALHNHYTQKSLSLSP
	2270	IL-2 C125A	APTSSSTKKTQLQLEHLLLDLQMILNGINNYKNPKLTRMLTF KFYMPKKATELKHLQCLEEELKPLEEVLNLAQSKNFHLRPR DLISNINVIVLELKGSETTFMCEYADETATIVEFLNRWITFAQ SIISTLT
	3308	linker	GGGGSGGGGS
	4031	Human Fc Knob cys N297A	DKTHTCPPCPAPELLGGPSVFLFPPKPKDTLMISRTPEVTCV VVDVSHEDPEVKFNWYVDGVEVHNAKTKPREEQYASTYR VVSVLTVLHQDWLNGKEYKCKVSNKALPAPIEKTISKAKG QPREPQVYTLPPCREEMTKNQVSLWCLVKGFYPSDIAVEWE SNGQPENNYKTTPPVLDSDGSFFLYSKLTVDKSRWQQGNV FSCSVMHEALHNHYTQKSLSLSP
Chain 3 (light chain) (CDRs underlined)	3518	Full Sequence	DIQMTQSPSFLSASVGDRVTITCKASQNVADRVVWHQQKPGK APKALIYSSSHRYKGVPSRFSGSGSGTEFTLTISSLQPEDFATYF CQQFKSYPLTFGQGTKLEIKRTVAAPSVFIFPPSDEQLKSGTASV VCLLNNFYPREAKVQWKVDNALQSGNSQESVTEQDSKDSTYS LSSTLTLSKADYEKHKVYACEVTHQGLSSPVTKSFNRGEC
	1349	anti-TCRvβ VL	DIQMTQSPSFLSASVGDRVTITCKASQNVADRVVWHQQKPGK APKALIYSSSHRYKGVPSRFSGSGSGTEFTLTISSLQPEDFATYF CQQFKSYPLTFGQGTKLEIK
	3644	Immunoglobulin kappa constant C region	RTVAAPSVFIFPPSDEQLKSGTASVVCLLNNFYPREAKVQWKV DNALQSGNSQESVTEQDSKDSTYSLSSTLTLSKADYEKHKVYA CEVTHQGLSSPVTKSFNRGEC

Humanized Molecule 3			
	SEQ ID NO:		
Chain 1 (heavy chain) (CDRs underlined)	4004	Full Sequence	QVQLVQSGAEVKKPGSSVKVSCKASGYSFTTYYIHWVRQAPG QGLEWMGWFFPGSGNIKYNEKFKGRVTITADTSTSTAYMELSS LRSEDTAVYYCAGSYYSYDVLDYWGQGTTVTVSSASTKGPSV FPLAPSSKSTSGGTAALGCLVKDYFPEPVTVSWNSGALTSGVH TFPAVLQSSGLYSLSSVVTVPSSSLGTQTYICNVNHKPSNTKVD KRVEPKSCDKTHTCPPCPAPELLGGPSVFLFPPKPKDTLMISRTP EVTCVVVDVSHEDPEVKFNWYVDGVEVHNAKTKPREEQYAS TYRVVSVLTVLHQDWLNGKEYKCKVSNKALPAPIEKTISKAK GQPREPQVCTLPPSREEMTKNQVSLSCAVKGFYPSDIAVEWES NGQPENNYKTTPPVLDSDGSFFLVSKLTVDKSRWQQGNVFSCS VMHEALHNHYTQKSLSLSPGK
	9	anti-TCRvβ VH	QVQLVQSGAEVKKPGSSVKVSCKASGYSFTTYYIHWVRQAPG QGLEWMGWFFPGSGNIKYNEKFKGRVTITADTSTSTAYMELSS LRSEDTAVYYCAGSYYSYDVLDYWGQGTTVTVSS
	3649	Human IgG1 hole cys N297A	ASTKGPSVFPLAPSSKSTSGGTAALGCLVKDYFPEPVTVSWNS GALTSGVHTFPAVLQSSGLYSLSSVVTVPSSSLGTQTYICNVNH KPSNTKVDKRVEPKSCDKTHTCPPCPAPELLGGPSVFLFPPKPK DTLMISRTPEVTCVVVDVSHEDPEVKFNWYVDGVEVHNAKTK PREEQYASTYRVVSVLTVLHQDWLNGKEYKCKVSNKALPAPI EKTISKAKGQPREPQVCTLPPSREEMTKNQVSLSCAVKGFYPS DIAVEWESNGQPENNYKTTPPVLDSDGSFFLVSKLTVDKSRWQ QGNVFSCSVMHEALHNHYTQKSLSLSPGK
Chain 2 (IL2-Fc)	4030	Full Sequence	APASSSTKKTQLQLEHLLLDLQMILNGINNYKNPKLTRMLT AKFAMPKKATELKHLQCLEEELKPLEEVLNGAQSKNFHLRP RDLISNINVIVLELKGSETTFMCEYADETATIVEFLNRWITFA QSIISTLTGGGGSGGGGSDKTHTCPPCPAPELLGGPSVFLFPP KPKDTLMISRTPEVTCVVVDVSHEDPEVKFNWYVDGVEVH NAKTKPREEQYASTYRVVSVLTVLHQDWLNGKEYKCKVS NKALPAPIEKTISKAKGQPREPQVYTLPPCREEMTKNQVSL WCLVKGFYPSDIAVEWESNGQPENNYKTTPPVLDSDGSFFL YSKLTVDKSRWQQGNVFSCSVMHEALHNHYTQKSLSLSPG K
	2280	IL-2	APASSSTKKTQLQLEHLLLDLQMILNGINNYKNPKLTRMLT AKFAMPKKATELKHLQCLEEELKPLEEVLNGAQSKNFHLRP RDLISNINVIVLELKGSETTFMCEYADETATIVEFLNRWITFA QSIISTLT
	3308	linker	GGGGSGGGGS
	3648	Human Fc Knob cys N297A	DKTHTCPPCPAPELLGGPSVFLFPPKPKDTLMISRTPEVTCV VVDVSHEDPEVKFNWYVDGVEVHNAKTKPREEQYASTYR VVSVLTVLHQDWLNGKEYKCKVSNKALPAPIEKTISKAKG QPREPQVYTLPPCREEMTKNQVSLWCLVKGFYPSDIAVEWE SNGQPENNYKTTPPVLDSDGSFFLYSKLTVDKSRWQQGNV FSCSVMHEALHNHYTQKSLSLSPGK
Chain 3 (light chain) (CDRs underlined)	4005	Full Sequence	DIQMTQSPSSLSASVGDRVTITCKASQNVGINVVWHQQKPG KVPKALIYSSSHRYSGVPSRFSGSGSGTDFTLTISSLQPEDVA TYFCQQFKSYPLTFGQGTKLEIKRTVAAPSVFIFPPSDEQLKS GTASVVCLLNNFYPREAKVQWKVDNALQSGNSQESVTEQD SKDSTYSLSSTLTLSKADYEKHKVYACEVTHQGLSSPVTKS FNRGEC
	11	anti-TCRvβ VL	DIQMTQSPSSLSASVGDRVTITCKASQNVGINVVWHQQKPG KVPKALIYSSSHRYSGVPSRFSGSGSGTDFTLTISSLQPEDVA TYFCQQFKSYPLTFGQGTKLEIK

	3644	Immunoglobulin kappa constant C region	RTVAAPSVFIFPPSDEQLKSGTASVVCLLNNFYPREAKVQW KVDNALQSGNSQESVTEQDSKDSTYSLSSTLTLSKADYEKH KVYACEVTHQGLSSPVTKSFNRGEC
Humanized Molecule 4			
	SEQ ID NO:		
Chain 1 (heavy chain) (CDRs underlined)	4006	Full Sequence	QVQLVQSGAEVKKPGSSVKVSCKASGYSFTTYYIHWVRQAPG QGLEWMGWFFPGSGNIKYNEKFKGRVTITADTSTSTAYMELSS LRSEDTAVYYCAGSYYSYDVLDYWGQGTTVTVSSASTKGPSV FPLAPSSKSTSGGTAALGCLVKDYFPEPVTVSWNSGALTSGVH TFPAVLQSSGLYSLSSVVTVPSSSLGTQTYICNVNHKPSNTKVD KRVEPKSCDKTHTCPPCPAPELLGGPSVFLFPPKPKDTLMISRTP EVTCVVVDVSHEDPEVKFNWYVDGVEVHNAKTKPREEQYAS TYRVVSVLTVLHQDWLNGKEYKCKVSNKALPAPIEKTISKAK GQPREPQVCTLPPSREEMTKNQVSLSCAVKGFYPSDIAVEWES NGQPENNYKTTPPVLDSDGSFFLVSKLTVDKSRWQQGNVFSCS VMHEALHNHYTQKSLSLSP
	9	anti-TCRvβ VH	QVQLVQSGAEVKKPGSSVKVSCKASGYSFTTYYIHWVRQAPG QGLEWMGWFFPGSGNIKYNEKFKGRVTITADTSTSTAYMELSS LRSEDTAVYYCAGSYYSYDVLDYWGQGTTVTVSS
	4001	Human IgG1 hole cys N297A	ASTKGPSVFPLAPSSKSTSGGTAALGCLVKDYFPEPVTVSWNS GALTSGVHTFPAVLQSSGLYSLSSVVTVPSSSLGTQTYICNVNH KPSNTKVDKRVEPKSCDKTHTCPPCPAPELLGGPSVFLFPPKPK DTLMISRTPEVTCVVVDVSHEDPEVKFNWYVDGVEVHNAKTK PREEQYASTYRVVSVLTVLHQDWLNGKEYKCKVSNKALPAPI EKTISKAKGQPREPQVCTLPPSREEMTKNQVSLSCAVKGFYPS DIAVEWESNGQPENNYKTTPPVLDSDGSFFLVSKLTVDKSRWQ QGNVFSCSVMHEALHNHYTQKSLSLSP
Chain 2 (IL2-Fc)	4007	Full Sequence	APASSSTKKTQLQLEHLLLDLQMILNGINNYKNPKLTRMLT AKFAMPKKATELKHLQCLEEELKPLEEVLNGAQSKNFHLRP RDLISNINVIVLELKGSETTFMCEYADETATIVEFLNRWITFA QSIISTLTGGGGSGGGGSDKTHTCPPCPAPELLGGPSVFLFPP KPKDTLMISRTPEVTCVVVDVSHEDPEVKFNWYVDGVEVH NAKTKPREEQYASTYRVVSVLTVLHQDWLNGKEYKCKVS NKALPAPIEKTISKAKGQPREPQVYTLPPCREEMTKNQVSL WCLVKGFYPSDIAVEWESNGQPENNYKTTPPVLDSDGSFFL YSKLTVDKSRWQQGNVFSCSVMHEALHNHYTQKSLSLSP
	2280	IL-2	APASSSTKKTQLQLEHLLLDLQMILNGINNYKNPKLTRMLT AKFAMPKKATELKHLQCLEEELKPLEEVLNGAQSKNFHLRP RDLISNINVIVLELKGSETTFMCEYADETATIVEFLNRWITFA QSIISTLT
	3308	linker	GGGGSGGGGS
	4031	Human Fc Knob cys N297A	DKTHTCPPCPAPELLGGPSVFLFPPKPKDTLMISRTPEVTCV VVDVSHEDPEVKFNWYVDGVEVHNAKTKPREEQYASTYR VVSVLTVLHQDWLNGKEYKCKVSNKALPAPIEKTISKAKG QPREPQVYTLPPCREEMTKNQVSLWCLVKGFYPSDIAVEWE SNGQPENNYKTTPPVLDSDGSFFLYSKLTVDKSRWQQGNV FSCSVMHEALHNHYTQKSLSLSP
Chain 3 (light chain) (CDRs underlined)	4005	Full Sequence	DIQMTQSPSSLSASVGDRVTITCKASQNVGINVVWHQQKPGKV PKALIYSSSHRYSGVPSRFSGSGSGTDFTLTISSLQPEDVATYFC QQFKSYPLTFGQGTKLEIKRTVAAPSVFIFPPSDEQLKSGTASV VCLLNNFYPREAKVQWKVDNALQSGNSQESVTEQDSKDSTYS LSSTLTLSKADYEKHKVYACEVTHQGLSSPVTKSFNRGEC
	11	anti-TCRvβ VL	DIQMTQSPSSLSASVGDRVTITCKASQNVGINVVWHQQKPGKV PKALIYSSSHRYSGVPSRFSGSGSGTDFTLTISSLQPEDVATYFC QQFKSYPLTFGQGTKLEIK

	3644	Immunoglobulin kappa constant C region	RTVAAPSVFIFPPSDEQLKSGTASVVCLLNNFYPREAKVQWKV DNALQSGNSQESVTEQDSKDSTYSLSSTLTLSKADYEKHKVYA CEVTHQGLSSPVTKSFNRGEC
Humanized Molecule 5			
	SEQ ID NO:		
Chain 1 (heavy chain) (CDRs underlined)	4008	Full Sequence	QVQLVQSGAEVKKPGSSVKVSCKASGTDFDKIYIHWVRQAPG QGLEWMGRVSAGSGNTKYNEKFKGRVTITADTSTSTAYMELS SLRSEDTAVYYCAGSYYSYDVLDYWGQGTTVTVSSASTKGPS VFPLAPSSKSTSGGTAALGCLVKDYFPEPVTVSWNSGALTSGV HTFPAVLQSSGLYSLSSVVTVPSSSLGTQTYICNVNHKPSNTKV DKRVEPKSCDKTHTCPPCPAPELLGGPSVFLFPPKPKDTLMISR TPEVTCVVVDVSHEDPEVKFNWYVDGVEVHNAKTKPREEQY ASTYRVVSVLTVLHQDWLNGKEYKCKVSNKALPAPIEKTISKA KGQPREPQVCTLPPSREEMTKNQVSLSCAVKGFYPSDIAVEWE SNGQPENNYKTTPPVLDSDGSFFLVSKLTVDKSRWQQGNVFSC SVMHEALHNHYTQKSLSLSPGK
	109	anti-TCRvβ VH	QVQLVQSGAEVKKPGSSVKVSCKASGTDFDKIYIHWVRQAPG QGLEWMGRVSAGSGNTKYNEKFKGRVTITADTSTSTAYMELS SLRSEDTAVYYCAGSYYSYDVLDYWGQGTTVTVSS
	3649	Human IgG1 hole cys N297A	ASTKGPSVFPLAPSSKSTSGGTAALGCLVKDYFPEPVTVSWNS GALTSGVHTFPAVLQSSGLYSLSSVVTVPSSSLGTQTYICNVNH KPSNTKVDKRVEPKSCDKTHTCPPCPAPELLGGPSVFLFPPKPK DTLMISRTPEVTCVVVDVSHEDPEVKFNWYVDGVEVHNAKTK PREEQYASTYRVVSVLTVLHQDWLNGKEYKCKVSNKALPAPI EKTISKAKGQPREPQVCTLPPSREEMTKNQVSLSCAVKGFYPS DIAVEWESNGQPENNYKTTPPVLDSDGSFFLVSKLTVDKSRWQ QGNVFSCSVMHEALHNHYTQKSLSLSPGK
Chain 2 (IL2-Fc)	3521	Full Sequence	APTSSSTKKTQLQLEHLLLDLQMILNGINNYKNPKLTRMLTF KFYMPKKATELKHLQCLEEELKPLEEVLNLAQSKNFHLRPR DLISNINVIVLELKGSETTFMCEYADETATIVEFLNRWITFAQ SIISTLTGGGGSGGGGSDKTHTCPPCPAPELLGGPSVFLFPPK PKDTLMISRTPEVTCVVVDVSHEDPEVKFNWYVDGVEVHN AKTKPREEQYASTYRVVSVLTVLHQDWLNGKEYKCKVSN KALPAPIEKTISKAKGQPREPQVYTLPPCREEMTKNQVSLW CLVKGFYPSDIAVEWESNGQPENNYKTTPPVLDSDGSFFLY SKLTVDKSRWQQGNVFSCSVMHEALHNHYTQKSLSLSPGK
	2270	IL-2 C125A	APTSSSTKKTQLQLEHLLLDLQMILNGINNYKNPKLTRMLTF KFYMPKKATELKHLQCLEEELKPLEEVLNLAQSKNFHLRPR DLISNINVIVLELKGSETTFMCEYADETATIVEFLNRWITFAQ SIISTLT
	3308	linker	GGGGSGGGGS
	3648	Human Fc Knob cys N297A	DKTHTCPPCPAPELLGGPSVFLFPPKPKDTLMISRTPEVTCV VVDVSHEDPEVKFNWYVDGVEVHNAKTKPREEQYASTYR VVSVLTVLHQDWLNGKEYKCKVSNKALPAPIEKTISKAKG QPREPQVYTLPPCREEMTKNQVSLWCLVKGFYPSDIAVEWE SNGQPENNYKTTPPVLDSDGSFFLYSKLTVDKSRWQQGNV FSCSVMHEALHNHYTQKSLSLSPGK
Chain 3 (light chain) (CDRs underlined)	4009	Full Sequence	DIQMTQSPSFLSASVGDRVTITCKASQNVGNRVAWYQQKP GKAPKALIYSSSHRYKGVPSRFSGSGSGTEFTLTISSLQPEDF ATYFCQQFKSYPLTFGQGTKLEIKRTVAAPSVFIFPPSDEQL KSGTASVVCLLNNFYPREAKVQWKVDNALQSGNSQESVTE QDSKDSTYSLSSTLTLSKADYEKHKVYACEVTHQGLSSPVT KSFNRGEC

	108	anti-TCRvβ VL	DIQMTQSPSFLSASVGDRVTITCKASQNVGNRVAWYQQKP GKAPKALIYSSSHRYKGVPSRFSGSGSGTEFTLTISSLQPEDF ATYFCQQFKSYPLTFGQGTKLEIK
	3644	Immunoglobulin kappa constant C region	RTVAAPSVFIFPPSDEQLKSGTASVVCLLNNFYPREAKVQW KVDNALQSGNSQESVTEQDSKDSTYSLSSTLTLSKADYEKH KVYACEVTHQGLSSPVTKSFNRGEC
Humanized Molecule 6			
	SEQ ID NO:		
Chain 1 (heavy chain) (CDRs underlined)	4010	Full Sequence	QVQLVQSGAEVKKPGSSVKVSCKASGTDFDKIYIHWVRQAPG QGLEWMGRVSAGSGNTKYNEKFKGRVTITADTSTSTAYMELS SLRSEDTAVYYCAGSYYSYDVLDYWGQGTTVTVSSASTKGPS VFPLAPSSKSTSGGTAALGCLVKDYFPEPVTVSWNSGALTSGV HTFPAVLQSSGLYSLSSVVTVPSSSLGTQTYICNVNHKPSNTKV DKRVEPKSCDKTHTCPPCPAPELLGGPSVFLFPPKPKDTLMISR TPEVTCVVVDVSHEDPEVKFNWYVDGVEVHNAKTKPREEQY ASTYRVVSVLTVLHQDWLNGKEYKCKVSNKALPAPIEKTISKA KGQPREPQVCTLPPSREEMTKNQVSLSCAVKGFYPSDIAVEWE SNGQPENNYKTTPPVLDSDGSFFLVSKLTVDKSRWQQGNVFSC SVMHEALHNHYTQKSLSLSP
	109	anti-TCRvβ VH	QVQLVQSGAEVKKPGSSVKVSCKASGTDFDKIYIHWVRQAPG QGLEWMGRVSAGSGNTKYNEKFKGRVTITADTSTSTAYMELS SLRSEDTAVYYCAGSYYSYDVLDYWGQGTTVTVSS
	4001	Human IgG1 hole cys N297A	ASTKGPSVFPLAPSSKSTSGGTAALGCLVKDYFPEPVTVSWNS GALTSGVHTFPAVLQSSGLYSLSSVVTVPSSSLGTQTYICNVNH KPSNTKVDKRVEPKSCDKTHTCPPCPAPELLGGPSVFLFPPKPK DTLMISRTPEVTCVVVDVSHEDPEVKFNWYVDGVEVHNAKTK PREEQYASTYRVVSVLTVLHQDWLNGKEYKCKVSNKALPAPI EKTISKAKGQPREPQVCTLPPSREEMTKNQVSLSCAVKGFYPS DIAVEWESNGQPENNYKTTPPVLDSDGSFFLVSKLTVDKSRWQ QGNVFSCSVMHEALHNHYTQKSLSLSP
Chain 2 (IL2-Fc)	4003	Full Sequence	APTSSSTKKTQLQLEHLLLDLQMILNGINNYKNPKLTRMLTFKF YMPKKATELKHLQCLEEELKPLEEVLNLAQSKNFHLRPRDLIS NINVIVLELKGSETTFMCEYADETATIVEFLNRWITFAQSIISTLT GGGGSGGGGSDKTHTCPPCPAPELLGGPSVFLFPPKPKDTLMIS RTPEVTCVVVDVSHEDPEVKFNWYVDGVEVHNAKTKPREEQ YASTYRVVSVLTVLHQDWLNGKEYKCKVSNKALPAPIEKTISK AKGQPREPQVYTLPPCREEMTKNQVSLWCLVKGFYPSDIAVE WESNGQPENNYKTTPPVLDSDGSFFLYSKLTVDKSRWQQGNV FSCSVMHEALHNHYTQKSLSLSP
	2270	IL-2 C125A	APTSSSTKKTQLQLEHLLLDLQMILNGINNYKNPKLTRMLTFKF YMPKKATELKHLQCLEEELKPLEEVLNLAQSKNFHLRPRDLIS NINVIVLELKGSETTFMCEYADETATIVEFLNRWITFAQSIISTLT
	3308	linker	GGGGSGGGGS
	3648	Human Fc Knob cys N297A	DKTHTCPPCPAPELLGGPSVFLFPPKPKDTLMISRTPEVTCVVV DVSHEDPEVKFNWYVDGVEVHNAKTKPREEQYASTYRVVSV LTVLHQDWLNGKEYKCKVSNKALPAPIEKTISKAKGQPREPQV YTLPPCREEMTKNQVSLWCLVKGFYPSDIAVEWESNGQPENN YKTTPPVLDSDGSFFLYSKLTVDKSRWQQGNVFSCSVMHEAL HNHYTQKSLSLSPGK
Chain 3 (light chain) (CDRs underlined)	4009	Full Sequence	DIQMTQSPSFLSASVGDRVTITCKASQNVGNRVAWYQQKP GKAPKALIYSSSHRYKGVPSRFSGSGSGTEFTLTISSLQPEDF ATYFCQQFKSYPLTFGQGTKLEIKRTVAAPSVFIFPPSDEQL KSGTASVVCLLNNFYPREAKVQWKVDNALQSGNSQESVTE QDSKDSTYSLSSTLTLSKADYEKHKVYACEVTHQGLSSPVT KSFNRGEC

	108	anti-TCRvβ VL	DIQMTQSPSFLSASVGDRVTITCKASQNVGNRVAWYQQKP GKAPKALIYSSSHRYKGVPSRFSGSGSGTEFTLTISSLQPEDF ATYFCQQFKSYPLTFGQGTKLEIK
	3644	Immunoglobulin kappa constant C region	RTVAAPSVFIFPPSDEQLKSGTASVVCLLNNFYPREAKVQW KVDNALQSGNSQESVTEQDSKDSTYSLSSTLTLSKADYEKH KVYACEVTHQGLSSPVTKSFNRGEC
Humanized Molecule 7			
	SEQ ID NO:		
Chain 1 (heavy chain) (CDRs underlined)	4011	Full Sequence	QVQLVQSGAEVKKPGSSVKVSCKASGHDFKLTYIHWVRQA PGQGLEWMGRVSPGSGNTKYNEKFKGRVTITADTSTSTAY MELSSLRSEDTAVYYCAGSYYSYDVLDYWGQGTTVTVSSA STKGPSVFPLAPSSKSTSGGTAALGCLVKDYFPEPVTVSWNS GALTSGVHTFPAVLQSSGLYSLSSVVTVPSSSLGTQTYICNV NHKPSNTKVDKRVEPKSCDKTHTCPPCPAPELLGGPSVFLFP PKPKDTLMISRTPEVTCVVVDVSHEDPEVKFNWYVDGVEV HNAKTKPREEQYASTYRVVSVLTVLHQDWLNGKEYKCKV SNKALPAPIEKTISKAKGQPREPQVCTLPPSREEMTKNQVSL SCAVKGFYPSDIAVEWESNGQPENNYKTTPPVLDSDGSFFL VSKLTVDKSRWQQGNVFSCSVMHEALHNHYTQKSLSLSPG K
	182	anti-TCRvβ VH	QVQLVQSGAEVKKPGSSVKVSCKASGHDFKLTYIHWVRQA PGQGLEWMGRVSPGSGNTKYNEKFKGRVTITADTSTSTAY MELSSLRSEDTAVYYCAGSYYSYDVLDYWGQGTTVTVSS
	3649	Human IgG1 hole cys N297A	ASTKGPSVFPLAPSSKSTSGGTAALGCLVKDYFPEPVTVSW NSGALTSGVHTFPAVLQSSGLYSLSSVVTVPSSSLGTQTYIC NVNHKPSNTKVDKRVEPKSCDKTHTCPPCPAPELLGGPSVF LFPPKPKDTLMISRTPEVTCVVVDVSHEDPEVKFNWYVDGV EVHNAKTKPREEQYASTYRVVSVLTVLHQDWLNGKEYKC KVSNKALPAPIEKTISKAKGQPREPQVCTLPPSREEMTKNQV SLSCAVKGFYPSDIAVEWESNGQPENNYKTTPPVLDSDGSF FLVSKLTVDKSRWQQGNVFSCSVMHEALHNHYTQKSLSLS PGK
Chain 2 (IL2-Fc)	4013	Full Sequence	APTSSSTKKTQLQLEHLLLDLQMILNGINNYKNPKLTRMLTF KFYMPKKATELKHLQCLEEELKPLEEVLNLAQSKNFHLRPR DLISNINVIVLELKGSETTFMCEYADETATIVEFLNRWITFCQ SIISTLTGGGGSGGGGSDKTHTCPPCPAPELLGGPSVFLFPPK PKDTLMISRTPEVTCVVVDVSHEDPEVKFNWYVDGVEVHN AKTKPREEQYASTYRVVSVLTVLHQDWLNGKEYKCKVSN KALPAPIEKTISKAKGQPREPQVYTLPPCREEMTKNQVSLW CLVKGFYPSDIAVEWESNGQPENNYKTTPPVLDSDGSFFLY SKLTVDKSRWQQGNVFSCSVMHEALHNHYTQKSLSLSPGK
	2191	IL-2	APTSSSTKKTQLQLEHLLLDLQMILNGINNYKNPKLTRMLTF KFYMPKKATELKHLQCLEEELKPLEEVLNLAQSKNFHLRPR DLISNINVIVLELKGSETTFMCEYADETATIVEFLNRWITFCQ SIISTLT
	3308	linker	GGGGSGGGGS
	3648	Human Fc Knob cys N297A	DKTHTCPPCPAPELLGGPSVFLFPPKPKDTLMISRTPEVTCV VVDVSHEDPEVKFNWYVDGVEVHNAKTKPREEQYASTYR VVSVLTVLHQDWLNGKEYKCKVSNKALPAPIEKTISKAKG QPREPQVYTLPPCREEMTKNQVSLWCLVKGFYPSDIAVEWE SNGQPENNYKTTPPVLDSDGSFFLYSKLTVDKSRWQQGNV FSCSVMHEALHNHYTQKSLSLSPGK

Chain 3 (light chain) (CDRs underlined)	4012	Full Sequence	DIQMTQSPSFLSASVGDRVTITCKASQNVEDRVAWHQQKPGK APKALIYSSSHRYKGVPSRFSGSGSGTEFTLTISSLQPEDFATYF CQQFKSYPLTFGQGTKLEIKRTVAAPSVFIFPPSDEQLKSGTASV VCLLNNFYPREAKVQWKVDNALQSGNSQESVTEQDSKDSTYS LSSTLTLSKADYEKHKVYACEVTHQGLSSPVTKSFNRGEC
	181	anti-TCRvβ VL	DIQMTQSPSFLSASVGDRVTITCKASQNVEDRVAWHQQKPGK APKALIYSSSHRYKGVPSRFSGSGSGTEFTLTISSLQPEDFATYF CQQFKSYPLTFGQGTKLEIK
	3644	Immunoglobulin kappa constant C region	RTVAAPSVFIFPPSDEQLKSGTASVVCLLNNFYPREAKVQWKV DNALQSGNSQESVTEQDSKDSTYSLSSTLTLSKADYEKHKVYA CEVTHQGLSSPVTKSFNRGEC
Humanized Molecule 8			
	SEQ ID NO:		
Chain 1 (heavy chain) (CDRs underlined)	4014	Full Sequence	QVQLVQSGAEVKKPGSSVKVSCKASGHDFKLTYIHWVRQAPG QGLEWMGRVSPGSGNTKYNEKFKGRVTITADTSTSTAYMELS SLRSEDTAVYYCAGSYYSYDVLDYWGQGTTVTVSSASTKGPS VFPLAPSSKSTSGGTAALGCLVKDYFPEPVTVSWNSGALTSGV HTFPAVLQSSGLYSLSSVVTVPSSSLGTQTYICNVNHKPSNTKV DKRVEPKSCDKTHTCPPCPAPELLGGPSVFLFPPKPKDTLMISR TPEVTCVVVDVSHEDPEVKFNWYVDGVEVHNAKTKPREEQY ASTYRVVSVLTVLHQDWLNGKEYKCKVSNKALPAPIEKTISKA KGQPREPQVCTLPPSREEMTKNQVSLSCAVKGFYPSDIAVEWE SNGQPENNYKTTPPVLDSDGSFFLVSKLTVDKSRWQQGNVFSC SVMHEALHNHYTQKSLSLSP
	182	anti-TCRvβ VH	QVQLVQSGAEVKKPGSSVKVSCKASGHDFKLTYIHWVRQAPG QGLEWMGRVSPGSGNTKYNEKFKGRVTITADTSTSTAYMELS SLRSEDTAVYYCAGSYYSYDVLDYWGQGTTVTVSS
	4001	Human IgG1 hole cys N297A	ASTKGPSVFPLAPSSKSTSGGTAALGCLVKDYFPEPVTVSWNS GALTSGVHTFPAVLQSSGLYSLSSVVTVPSSSLGTQTYICNVNH KPSNTKVDKRVEPKSCDKTHTCPPCPAPELLGGPSVFLFPPKPK DTLMISRTPEVTCVVVDVSHEDPEVKFNWYVDGVEVHNAKTK PREEQYASTYRVVSVLTVLHQDWLNGKEYKCKVSNKALPAPI EKTISKAKGQPREPQVCTLPPSREEMTKNQVSLSCAVKGFYPS DIAVEWESNGQPENNYKTTPPVLDSDGSFFLVSKLTVDKSRWQ QGNVFSCSVMHEALHNHYTQKSLSLSP
Chain 2 (IL2-Fc)	4015	Full Sequence	APTSSSTKKTQLQLEHLLLDLQMILNGINNYKNPKLTRMLTF KFYMPKKATELKHLQCLEEELKPLEEVLNLAQSKNFHLRPR DLISNINVIVLELKGSETTFMCEYADETATIVEFLNRWITFCQ SIISTLTGGGGSGGGGSDKTHTCPPCPAPELLGGPSVFLFPPK PKDTLMISRTPEVTCVVVDVSHEDPEVKFNWYVDGVEVHN AKTKPREEQYASTYRVVSVLTVLHQDWLNGKEYKCKVSN KALPAPIEKTISKAKGQPREPQVYTLPPCREEMTKNQVSLW CLVKGFYPSDIAVEWESNGQPENNYKTTPPVLDSDGSFFLY SKLTVDKSRWQQGNVFSCSVMHEALHNHYTQKSLSLSP
	2191	IL-2	APTSSSTKKTQLQLEHLLLDLQMILNGINNYKNPKLTRMLTF KFYMPKKATELKHLQCLEEELKPLEEVLNLAQSKNFHLRPR DLISNINVIVLELKGSETTFMCEYADETATIVEFLNRWITFCQ SIISTLT
	3308	linker	GGGGSGGGGS
	4031	Human Fc Knob cys N297A	DKTHTCPPCPAPELLGGPSVFLFPPKPKDTLMISRTPEVTCV VVDVSHEDPEVKFNWYVDGVEVHNAKTKPREEQYASTYR VVSVLTVLHQDWLNGKEYKCKVSNKALPAPIEKTISKAKG QPREPQVYTLPPCREEMTKNQVSLWCLVKGFYPSDIAVEWE SNGQPENNYKTTPPVLDSDGSFFLYSKLTVDKSRWQQGNV FSCSVMHEALHNHYTQKSLSLSP

Chain 3 (light chain) (CDRs underlined)	4012	Full Sequence	DIQMTQSPSFLSASVGDRVTITCKASQNVEDRVAWHQQKP GKAPKALIYSSSHRYKGVPSRFSGSGSGTEFTLTISSLQPEDF ATYFCQQFKSYPLTFGQGTKLEIKRTVAAPSVFIFPPSDEQL KSGTASVVCLLNNFYPREAKVQWKVDNALQSGNSQESVTE QDSKDSTYSLSSTLTLSKADYEKHKVYACEVTHQGLSSPVT KSFNRGEC
	181	anti-TCRvβ VL	DIQMTQSPSFLSASVGDRVTITCKASQNVEDRVAWHQQKP GKAPKALIYSSSHRYKGVPSRFSGSGSGTEFTLTISSLQPEDF ATYFCQQFKSYPLTFGQGTKLEIK
	3644	Immunoglobulin kappa constant C region	RTVAAPSVFIFPPSDEQLKSGTASVVCLLNNFYPREAKVQW KVDNALQSGNSQESVTEQDSKDSTYSLSSTLTLSKADYEKH KVYACEVTHQGLSSPVTKSFNRGEC
Humanized Molecule 9			
	SEQ ID NO:		
Chain 1 (heavy chain) (CDRs underlined)	4016	Full Sequence	QVQLVQSGAEVKKPGSSVKVSCKASGTDFDKTYIHWVRQA PGQGLEWMGRISAGSGNVKYNEKFKGRVTITADTSTSTAY MELSSLRSEDTAVYYCAGSYYSYDVLDYWGQGTTVTVSSA STKGPSVFPLAPSSKSTSGGTAALGCLVKDYFPEPVTVSWNS GALTSGVHTFPAVLQSSGLYSLSSVVTVPSSSLGTQTYICNV NHKPSNTKVDKRVEPKSCDKTHTCPPCPAPELLGGPSVFLFP PKPKDTLMISRTPEVTCVVVDVSHEDPEVKFNWYVDGVEV HNAKTKPREEQYASTYRVVSVLTVLHQDWLNGKEYKCKV SNKALPAPIEKTISKAKGQPREPQVCTLPPSREEMTKNQVSL SCAVKGFYPSDIAVEWESNGQPENNYKTTPPVLDSDGSFFL VSKLTVDKSRWQQGNVFSCSVMHEALHNHYTQKSLSLSPG K
	4029	anti-TCRvβ VH	QVQLVQSGAEVKKPGSSVKVSCKASGTDFDKTYIHWVRQA PGQGLEWMGRISAGSGNVKYNEKFKGRVTITADTSTSTAY MELSSLRSEDTAVYYCAGSYYSYDVLDYWGQGTTVTVSS
	3649	Human IgG1 hole cys N297A	ASTKGPSVFPLAPSSKSTSGGTAALGCLVKDYFPEPVTVSW NSGALTSGVHTFPAVLQSSGLYSLSSVVTVPSSSLGTQTYIC NVNHKPSNTKVDKRVEPKSCDKTHTCPPCPAPELLGGPSVF LFPPKPKDTLMISRTPEVTCVVVDVSHEDPEVKFNWYVDGV EVHNAKTKPREEQYASTYRVVSVLTVLHQDWLNGKEYKC KVSNKALPAPIEKTISKAKGQPREPQVCTLPPSREEMTKNQV SLSCAVKGFYPSDIAVEWESNGQPENNYKTTPPVLDSDGSF FLVSKLTVDKSRWQQGNVFSCSVMHEALHNHYTQKSLSLS PGK
Chain 2 (IL2-Fc)	3521	Full Sequence	APTSSSTKKTQLQLEHLLLDLQMILNGINNYKNPKLTRMLTF KFYMPKKATELKHLQCLEEELKPLEEVLNLAQSKNFHLRPR DLISNINVIVLELKGSETTFMCEYADETATIVEFLNRWITFAQ SIISTLTGGGGSGGGGSDKTHTCPPCPAPELLGGPSVFLFPPK PKDTLMISRTPEVTCVVVDVSHEDPEVKFNWYVDGVEVHN AKTKPREEQYASTYRVVSVLTVLHQDWLNGKEYKCKVSN KALPAPIEKTISKAKGQPREPQVYTLPPCREEMTKNQVSLW CLVKGFYPSDIAVEWESNGQPENNYKTTPPVLDSDGSFFLY SKLTVDKSRWQQGNVFSCSVMHEALHNHYTQKSLSLSPGK
	2270	IL-2 C125A	APTSSSTKKTQLQLEHLLLDLQMILNGINNYKNPKLTRMLTF KFYMPKKATELKHLQCLEEELKPLEEVLNLAQSKNFHLRPR DLISNINVIVLELKGSETTFMCEYADETATIVEFLNRWITFAQ SIISTLT
	3308	linker	GGGGSGGGGS

	3648	Human Fc Knob cys N297A	DKTHTCPPCPAPELLGGPSVFLFPPKPKDTLMISRTPEVTCV VVDVSHEDPEVKFNWYVDGVEVHNAKTKPREEQYASTYR VVSVLTVLHQDWLNGKEYKCKVSNKALPAPIEKTISKAKG QPREPQVYTLPPCREEMTKNQVSLWCLVKGFYPSDIAVEWE SNGQPENNYKTTPPVLDSDGSFFLYSKLTVDKSRWQQGNV FSCSVMHEALHNHYTQKSLSLSPGK
Chain 3 (light chain) (CDRs underlined)	4017	Full Sequence	DIQMTQSPSFLSASVGDRVTITCKASQNVDDRVAWYQQKP GKAPKALIYSSSHRYKGVPSRFSGSGSGTEFTLTISSLQPEDF ATYFCQQFKSYPLTFGQGTKLEIKRTVAAPSVFIFPPSDEQL KSGTASVVCLLNNFYPREAKVQWKVDNALQSGNSQESVTE QDSKDSTYSLSSTLTLSKADYEKHKVYACEVTHQGLSSPVT KSFNRGEC
	187	anti-TCRvβ VL	DIQMTQSPSFLSASVGDRVTITCKASQNVDDRVAWYQQKP GKAPKALIYSSSHRYKGVPSRFSGSGSGTEFTLTISSLQPEDF ATYFCQQFKSYPLTFGQGTKLEIK
	3644	Immunoglobulin kappa constant C region	RTVAAPSVFIFPPSDEQLKSGTASVVCLLNNFYPREAKVQW KVDNALQSGNSQESVTEQDSKDSTYSLSSTLTLSKADYEKH KVYACEVTHQGLSSPVTKSFNRGEC
Humanized Molecule 10			
	SEQ ID NO:		
Chain 1 (heavy chain) (CDRs underlined)	4018	Full Sequence	QVQLVQSGAEVKKPGSSVKVSCKASGTDFDKTYIHWVRQAPG QGLEWMGRISAGSGNVKYNEKFKGRVTITADTSTSTAYMELSS LRSEDTAVYYCAGSYYSYDVLDYWGQGTTVTVSSASTKGPSV FPLAPSSKSTSGGTAALGCLVKDYFPEPVTVSWNSGALTSGVH TFPAVLQSSGLYSLSSVVTVPSSSLGTQTYICNVNHKPSNTKVD KRVEPKSCDKTHTCPPCPAPELLGGPSVFLFPPKPKDTLMISRTP EVTCVVVDVSHEDPEVKFNWYVDGVEVHNAKTKPREEQYAS TYRVVSVLTVLHQDWLNGKEYKCKVSNKALPAPIEKTISKAK GQPREPQVCTLPPSREEMTKNQVSLSCAVKGFYPSDIAVEWES NGQPENNYKTTPPVLDSDGSFFLVSKLTVDKSRWQQGNVFSCS VMHEALHNHYTQKSLSLSP
	4029	anti-TCRvβ VH	QVQLVQSGAEVKKPGSSVKVSCKASGTDFDKTYIHWVRQA PGQGLEWMGRISAGSGNVKYNEKFKGRVTITADTSTSTAY MELSSLRSEDTAVYYCAGSYYSYDVLDYWGQGTTVTVSS
	4001	Human IgG1 hole cys N297A	ASTKGPSVFPLAPSSKSTSGGTAALGCLVKDYFPEPVTVSWNS GALTSGVHTFPAVLQSSGLYSLSSVVTVPSSSLGTQTYICNVNH KPSNTKVDKRVEPKSCDKTHTCPPCPAPELLGGPSVFLFPPKPK DTLMISRTPEVTCVVVDVSHEDPEVKFNWYVDGVEVHNAKTK PREEQYASTYRVVSVLTVLHQDWLNGKEYKCKVSNKALPAPI EKTISKAKGQPREPQVCTLPPSREEMTKNQVSLSCAVKGFYPS DIAVEWESNGQPENNYKTTPPVLDSDGSFFLVSKLTVDKSRWQ QGNVFSCSVMHEALHNHYTQKSLSLSP
Chain 2 (IL2-Fc)	4002	Full Sequence	APTSSSTKKTQLQLEHLLLDLQMILNGINNYKNPKLTRMLTFKF YMPKKATELKHLQCLEEELKPLEEVLNLAQSKNFHLRPRDLIS NINVIVLELKGSETTFMCEYADETATIVEFLNRWITFAQSIISTLT GGGGSGGGGSDKTHTCPPCPAPELLGGPSVFLFPPKPKDTLMIS RTPEVTCVVVDVSHEDPEVKFNWYVDGVEVHNAKTKPREEQ YASTYRVVSVLTVLHQDWLNGKEYKCKVSNKALPAPIEKTISK AKGQPREPQVYTLPPCREEMTKNQVSLWCLVKGFYPSDIAVE WESNGQPENNYKTTPPVLDSDGSFFLYSKLTVDKSRWQQGNV FSCSVMHEALHNHYTQKSLSLSP
	2270	IL-2 C125A	APTSSSTKKTQLQLEHLLLDLQMILNGINNYKNPKLTRMLTFKF YMPKKATELKHLQCLEEELKPLEEVLNLAQSKNFHLRPRDLIS NINVIVLELKGSETTFMCEYADETATIVEFLNRWITFAQSIISTLT
	3308	linker	GGGGSGGGGS

	4031	Human Fc Knob cys N297A	DKTHTCPPCPAPELLGGPSVFLFPPKPKDTLMISRTPEVTCV VVDVSHEDPEVKFNWYVDGVEVHNAKTKPREEQYASTYR VVSVLTVLHQDWLNGKEYKCKVSNKALPAPIEKTISKAKG QPREPQVYTLPPCREEMTKNQVSLWCLVKGFYPSDIAVEWE SNGQPENNYKTTPPVLDSDGSFFLYSKLTVDKSRWQQGNV FSCSVMHEALHNHYTQKSLSLSP
Chain 3 (light chain) (CDRs underlined)	4017	Full Sequence	DIQMTQSPSFLSASVGDRVTITCKASQNVDDRVAWYQQKP GKAPKALIYSSSHRYKGVPSRFSGSGSGTEFTLTISSLQPEDF ATYFCQQFKSYPLTFGQGTKLEIKRTVAAPSVFIFPPSDEQL KSGTASVVCLLNNFYPREAKVQWKVDNALQSGNSQESVTE QDSKDSTYSLSSTLTLSKADYEKHKVYACEVTHQGLSSPVT KSFNRGEC
	187	anti-TCRvβ VL	DIQMTQSPSFLSASVGDRVTITCKASQNVDDRVAWYQQKP GKAPKALIYSSSHRYKGVPSRFSGSGSGTEFTLTISSLQPEDF ATYFCQQFKSYPLTFGQGTKLEIK
	3644	Immunoglobulin kappa constant C region	RTVAAPSVFIFPPSDEQLKSGTASVVCLLNNFYPREAKVQW KVDNALQSGNSQESVTEQDSKDSTYSLSSTLTLSKADYEKH KVYACEVTHQGLSSPVTKSFNRGEC
Humanized Molecule 11			
	SEQ ID NO:		
Chain 1	4019		QVQLVQSGAEVKKPGSSVKVSCKASGHDFRLTYIHWVRQAPGQGLEWMGRV SAGSGNVKYNEKFKGRVTITADTSTSTAYMELSSLRSEDTAVYYCAVSYYSYD VLDYWGQGTTVTVSSGGGGSGGGGSGGGGSGGGGSDIQMTQSPSFLSASVGD RVTITCKASQNVADRVVWHQQKPGKAPKALIYSSSHRYKGVPSRFSGSGSGTE FTLTISSLQPEDFATYFCQQFKSYPLTFGQGTKLEIKASTKGPSVFPLAPSSKSTS GGTAALGCLVKDYFPEPVTVSWNSGALTSGVHTFPAVLQSSGLYSLSSVVTVPS SSLGTQTYICNVNHKPSNTKVDKRVEPKSCDKTHTCPPCPAPELLGGPSVFLFPP KPKDTLMISRTPEVTCVVVDVSHEDPEVKFNWYVDGVEVHNAKTKPREEQYA STYRVVSVLTVLHQDWLNGKEYKCKVSNKALPAPIEKTISKAKGQPREPQVCT LPPSREEMTKNQVSLSCAVKGFYPSDIAVEWESNGQPENNYKTTPPVLDSDGSF FLVSKLTVDKSRWQQGNVFSCSVMHEALHNHYTQKSLSLSP
Chain 2	4020		APTSSSTKKTQLQLEHLLLDLQMILNGINNYKNPKLTRMLTFKFYMPKKATELK HLQCLEEELKPLEEVLNLAQSKNFHLRPRDLISNINVIVLELKGSETTFMCEYAD ETATIVEFLNRWITFAQSIISTLTGGGGSGGGGSDKTHTCPPCPAPELLGGPSVFL FPPKPKDTLMISRTPEVTCVVVDVSHEDPEVKFNWYVDGVEVHNAKTKPREEQ YASTYRVVSVLTVLHQDWLNGKEYKCKVSNKALPAPIEKTISKAKGQPREPQV YTLPPCREEMTKNQVSLWCLVKGFYPSDIAVEWESNGQPENNYKTTPPVLDSD GSFFLYSKLTVDKSRWQQGNVFSCSVMHEALHNHYTQKSLSLSP
Humanized Molecule 12			
	SEQ ID NO:		
Chain 1	4021		QVQLVQSGAEVKKPGSSVKVSCKASGYSFTTYYIHWVRQAPGQGLEWMG WFFPGSGNIKYNEKFKGRVTITADTSTSTAYMELSSLRSEDTAVYYCAGSY YSYDVLDYWGQGTTVTVSSGGGGSGGGGSGGGGSGGGGSDIQMTQSPSSL SASVGDRVTITCKASQNVGINVVWHQQKPGKVPKALIYSSSHRYSGVPSRF SGSGSGTDFTLTISSLQPEDVATYFCQQFKSYPLTFGQGTKLEIKASTKGPSV FPLAPSSKSTSGGTAALGCLVKDYFPEPVTVSWNSGALTSGVHTFPAVLQSS GLYSLSSVVTVPSSSLGTQTYICNVNHKPSNTKVDKRVEPKSCDKTHTCPPC PAPELLGGPSVFLFPPKPKDTLMISRTPEVTCVVVDVSHEDPEVKFNWYVD GVEVHNAKTKPREEQYASTYRVVSVLTVLHQDWLNGKEYKCKVSNKALP APIEKTISKAKGQPREPQVCTLPPSREEMTKNQVSLSCAVKGFYPSDIAVEW ESNGQPENNYKTTPPVLDSDGSFFLVSKLTVDKSRWQQGNVFSCSVMHEA LHNHYTQKSLSLSP

Chain 2	4022	APASSSTKKTQLQLEHLLLDLQMILNGINNYKNPKLTRMLTAKFAMPKKAT ELKHLQCLEEELKPLEEVLNGAQSKNFHLRPRDLISNINVIVLELKGSETTFM CEYADETATIVEFLNRWITFAQSIISTLTGGGGSGGGGSDKTHTCPPCPAPEL LGGPSVFLFPPKPKDTLMISRTPEVTCVVVDVSHEDPEVKFNWYVDGVEVH NAKTKPREEQYASTYRVVSVLTVLHQDWLNGKEYKCKVSNKALPAPIEKT ISKAKGQPREPQVYTLPPCREEMTKNQVSLWCLVKGFYPSDIAVEWESNGQ PENNYKTTPPVLDSDGSFFLYSKLTVDKSRWQQGNVFSCSVMHEALHNHY TQKSLSLSP
Humanized Molecule 13		
	SEQ ID NO:	
Chain 1	4023	QVQLVQSGAEVKKPGSSVKVSCKASGTDFDKIYIHWVRQAPGQGLEWMG RVSAGSGNTKYNEKFKGRVTITADTSTSTAYMELSSLRSEDTAVYYCAGSY YSYDVLDYWGQGTTVTVSSGGGGSGGGGSGGGGSGGGGSDIQMTQSPSFL SASVGDRVTITCKASQNVGNRVAWYQQKPGKAPKALIYSSSHRYKGVPSR FSGSGSGTEFTLTISSLQPEDFATYFCQQFKSYPLTFGQGTKLEIKASTKGPS VFPLAPSSKSTSGGTAALGCLVKDYFPEPVTVSWNSGALTSGVHTFPAVLQ SSGLYSLSSVVTVPSSSLGTQTYICNVNHKPSNTKVDKRVEPKSCDKTHTCP PCPAPELLGGPSVFLFPPKPKDTLMISRTPEVTCVVVDVSHEDPEVKFNWYV DGVEVHNAKTKPREEQYASTYRVVSVLTVLHQDWLNGKEYKCKVSNKAL PAPIEKTISKAKGQPREPQVCTLPPSREEMTKNQVSLSCAVKGFYPSDIAVE WESNGQPENNYKTTPPVLDSDGSFFLVSKLTVDKSRWQQGNVFSCSVMHE ALHNHYTQKSLSLSP
Chain 2	4024	APTSSSTKKTQLQLEHLLLDLQMILNGINNYKNPKLTRMLTFKFYMPKKAT ELKHLQCLEEELKPLEEVLNLAQSKNFHLRPRDLISNINVIVLELKGSETTFM CEYADETATIVEFLNRWITFAQSIISTLTGGGGSGGGGSDKTHTCPPCPAPEL LGGPSVFLFPPKPKDTLMISRTPEVTCVVVDVSHEDPEVKFNWYVDGVEVH NAKTKPREEQYASTYRVVSVLTVLHQDWLNGKEYKCKVSNKALPAPIEKT ISKAKGQPREPQVYTLPPCREEMTKNQVSLWCLVKGFYPSDIAVEWESNGQ PENNYKTTPPVLDSDGSFFLYSKLTVDKSRWQQGNVFSCSVMHEALHNHY TQKSLSLSP
Humanized Molecule 14		
	SEQ ID NO:	
Chain 1	4025	QVQLVQSGAEVKKPGSSVKVSCKASGHDFKLTYIHWVRQAPGQGLEWMG RVSPGSGNTKYNEKFKGRVTITADTSTSTAYMELSSLRSEDTAVYYCAGSY YSYDVLDYWGQGTTVTVSSGGGGSGGGGSGGGGSGGGGSDIQMTQSPSFL SASVGDRVTITCKASQNVEDRVAWHQQKPGKAPKALIYSSSHRYKGVPSRF SGSGSGTEFTLTISSLQPEDFATYFCQQFKSYPLTFGQGTKLEIKASTKGPSV FPLAPSSKSTSGGTAALGCLVKDYFPEPVTVSWNSGALTSGVHTFPAVLQSS GLYSLSSVVTVPSSSLGTQTYICNVNHKPSNTKVDKRVEPKSCDKTHTCPPC PAPELLGGPSVFLFPPKPKDTLMISRTPEVTCVVVDVSHEDPEVKFNWYVD GVEVHNAKTKPREEQYASTYRVVSVLTVLHQDWLNGKEYKCKVSNKALP APIEKTISKAKGQPREPQVCTLPPSREEMTKNQVSLSCAVKGFYPSDIAVEW ESNGQPENNYKTTPPVLDSDGSFFLVSKLTVDKSRWQQGNVFSCSVMHEA LHNHYTQKSLSLSP
Chain 2	4026	APTSSSTKKTQLQLEHLLLDLQMILNGINNYKNPKLTRMLTFKFYMPKKAT ELKHLQCLEEELKPLEEVLNLAQSKNFHLRPRDLISNINVIVLELKGSETTFM CEYADETATIVEFLNRWITFCQSIISTLTGGGGSGGGGSDKTHTCPPCPAPEL LGGPSVFLFPPKPKDTLMISRTPEVTCVVVDVSHEDPEVKFNWYVDGVEVH NAKTKPREEQYASTYRVVSVLTVLHQDWLNGKEYKCKVSNKALPAPIEKT ISKAKGQPREPQVYTLPPCREEMTKNQVSLWCLVKGFYPSDIAVEWESNGQ PENNYKTTPPVLDSDGSFFLYSKLTVDKSRWQQGNVFSCSVMHEALHNHY TQKSLSLSP
Humanized Molecule 15		

	SEQ ID NO:	
Chain 1	4027	QVQLVQSGAEVKKPGSSVKVSCKASGTDFDKTYIHWVRQAPGQGLEWMGRIS AGSGNVKYNEKFKGRVTITADTSTSTAYMELSSLRSEDTAVYYCAGSYYSYDV LDYWGQGTTVTVSSGGGGSGGGGSGGGGSGGGGSDIQMTQSPSFLSASVGDR VTITCKASQNVDDRVAWYQQKPGKAPKALIYSSSHRYKGVPSRFSGSGSGTEF TLTISSLQPEDFATYFCQQFKSYPLTFGQGTKLEIKASTKGPSVFPLAPSSKSTSG GTAALGCLVKDYFPEPVTVSWNSGALTSGVHTFPAVLQSSGLYSLSSVVTVPSS SLGTQTYICNVNHKPSNTKVDKRVEPKSCDKTHTCPPCPAPELLGGPSVFLFPPK PKDTLMISRTPEVTCVVVDVSHEDPEVKFNWYVDGVEVHNAKTKPREEQYAS TYRVVSVLTVLHQDWLNGKEYKCKVSNKALPAPIEKTISKAKGQPREPQVCTL PPSREEMTKNQVSLSCAVKGFYPSDIAVEWESNGQPENNYKTTPPVLDSDGSFF LVSKLTVDKSRWQQGNVFSCSVMHEALHNHYTQKSLSLSP
Chain 2	4028	APTSSSTKKTQLQLEHLLLDLQMILNGINNYKNPKLTRMLTFKFYMPKKATELK HLQCLEEELKPLEEVLNLAQSKNFHLRPRDLISNINVIVLELKGSETTFMCEYAD ETATIVEFLNRWITFAQSIISTLTGGGGSGGGGSDKTHTCPPCPAPELLGGPSVFL FPPKPKDTLMISRTPEVTCVVVDVSHEDPEVKFNWYVDGVEVHNAKTKPREEQ YASTYRVVSVLTVLHQDWLNGKEYKCKVSNKALPAPIEKTISKAKGQPREPQV YTLPPCREEMTKNQVSLWCLVKGFYPSDIAVEWESNGQPENNYKTTPPVLDSD GSFFLYSKLTVDKSRWQQGNVFSCSVMHEALHNHYTQKSLSLSP

EXAMPLES

[00721] The present disclosure will be more specifically illustrated by the following Examples. However, it should be understood that the present disclosure is not limited by these examples in any manner.

Example 1: Preclinical Studies

[00722] Investigational Product:

[00723] The investigational product for the preclinical studies described in this example is Compound 1, a bifunctional antibody-fusion molecule comprising an antibody Fab region that binds to a subset of human αβ T cells expressing the germline-encoded variable beta 6 and 10 (Vβ6/Vβ10) chains of the T cell receptor (TCR) and a physiologically active, unmodified human IL-2 molecule (the other binding arm) fused to the IgG1 antibody Fc domain containing an N297A mutation to prevent interaction with Fc receptors.

[00724] Compound 1 Non-clinical Pharmacology

[00725] (A) In Vitro Pharmacology

[00726] Compound 1 showed high-affinity binding to both human Vβ6-5 and cynomolgus Vβ6-2 TCRs (the dominant TCRs targeted by Compound 1 and representative of the predominant Vβ6 TCR variants expanded by Compound 1 in respective species). In addition, Compound 1 shows comparable binding to both human and Cynomolgus IL-2Rα and IL-2Rβγ heterodimers. In vitro stimulation of human T cells with Compound 1 demonstrated selective expansion of Vβ6/Vβ10 T cells with an approximately 3-fold preferential increase in the expansion of cytotoxic $CD8^+$ T cells over $CD4^+$ T cells. Besides causing expansion and upregulation of CD25, Compound 1-stimulated T cells in vitro show enhanced T cell effector cytokine production (e.g., IFN-γ and IL-2) in human and NHP primary T cells from peripheral blood mononuclear cells (PBMCs).

of the cells. Adjusted p-values reported by Seurat use Bonferroni correction at a significance threshold of <0.05 and were used to determine genes whose expression significantly changes across conditions. Cells were labelled positive for TRBV based on the gene expression of Trbv13-2 and Trvb13-3.

[00956] For murine pharmacokinetics analyses, naive Balb/c mice were injected IP with a single dose of mSTAR (His-tag construct produced at Marengo Therapeutics) at doses 0.5, 1 and 1.5 mg/kg. At the 0.5, 1, 2, 4, 6, 24, 48, 72hr timepoints, 20µl of blood were collected without anti-coagulants by tail prick. For the 168hr timepoint, animals were euthanized by CO2 inhalation and the final collection was done via cardiac puncture. Blood was dispensed into a Wheaton conical-bottom 350 µl glass insert tube (VWR, #97045-060) which is placed into a 1.5ml microcentrifuge tube and the blood is allowed to clot for 30 mins at room temperature. Serum samples were collected by centrifuging the tubes at 5000 rpm for 10 minutes for PK analysis. PK assessment of mSTAR was performed using MSD electrochemiluminescence (ECL) sandwich-based (MSD, XL55XA) immunoassays, following manufacturer's protocol. In brief, for mSTAR measurements, human IL-2 antibody (R&D Systems, #MAB202) used as the capture antibody, followed by a two-step biotin anti-6X His-tag antibody ("6X His" disclosed as SEQ ID NO: 4032) (Abcam, #Ab27025) and streptavidin SULFO-tag label (MSD, #R32AD-1) as the detection antibodies. Value of unknown concentrations were determined by PK-solver (Excel add-in) using the nonlinear regression of an 11-point standard curve to known concentrations of mSTAR, with the fourth order polynomial model.

[00957] For murine pharmacodynamics analyses, Balb/c mice were injected IP with a single dose of mSTAR at 1 mg/kg. At the 3, 24, 72, 120, and 168 hrs timepoints, animals were euthanized by CO2 inhalation for blood collection via cardiac puncture. Blood and tissue PD assessment for Vβ13+in balb/c mice was done by flow analysis. The list of antibodies used were as follows for cell surface staining: BV-510 anti-mouse CD8 (clone 53-6.7, Biolegend, #100752), BV-605 anti-mouse CD25 (clone PC61, Biolegend, #102036), BV-650 anti-mouse NKp46 (clone 29A1.4, Biolegend, #137635), BV-711 anti-mouse CD19 (clone 6D5, Biolegend, #115555), BV-750 anti-mouse CD3 (clone 17A2, Biolegend, #100249), PerCP-Cy5.5 anti-mouse CD45 (clone 30-F11, Biolegend, #103132), APC-Cy7 anti-mouse CD49b (clone DX5, Biolegend, #108920), BV-480 anti-mouse CD4 (clone RM4-5, BD Biosciences, #565634), AlexaFluor 488 anti-C-tag (ThermoFisher, #7213252100). Cells were fixed and permeabilized for intracellular staining using FoxP3/Transcription factor staining buffer set (Thermofisher, #00-5523-00) and incubated with fluorochrome-conjugated antibodies for 30min on ice, in the dark. The list of antibodies used were as follows for intracellular staining: BV-421 granzyme B (clone QA18A28, Biolegend, #396414), PE anti-TCRVβ8.1, 8.2 (aka 13-2, 13-3) (clone MR5-2, Biolegend, #140104), AlexaFluor anti-mouse FoxP3 (clone 150D, Biolegend, #320012), eFluor 450 anti-Ki67 (clone SolA15, Invitrogen, #48-5698-82). Stained cells were analyzed using the Cytek Aurora. CD8+T cells were gated from single cells, live cells, CD49b-NKP46-CD19-CD3+and FoxP3-. Tregs were gated similarly with CD4+and FoxP3+. Blood samples were also tested for blood biochemistry analysis using the VETSCAN VS2 Chemistry Analyzer (Zoetis). Other dosing regimens includes: mSTAR at 0.5mg/kg, 1mg/kg, 1.5mg/kg QW for total of 2 treatments; and the more potent regimen with mSTAR at 1mg/kg and RSV F(ab)2 x (IL-2)2 at 1.5mg/ml twice weekly for total of 3 treatments to evaluate IL-2 control effects.

Table S5. AH1-specific CDR3 sequences found only in Vβ13+ TILs from each mSTAR treated mice bearing CT26 tumors

SEQ ID NO:	mSTAR	SEQ ID NO:	PBS (Control)
4033	CASGDAWGSAETLYF	4053	CASGDAWGVAETLYF
4034	CASGDGWGGAETLYF	4054	CASSAFYEQYF
4035	CASGDLGYEQYF	4055	CASSDGWGYEQYF
4036	CASGTGAYEQYF		
4037	CASSRQNSDYTF		
4038	CASSAGTTEVFF		
4039	CASAGGYEQYF		
4040	CASRTGGSYEQYF		
4041	CASSAGGSDYTF		
4042	CASSDAGYEQYF		
4043	CASSDAQYEQYF		
4044	CASSDGGSYEQYF		
4045	CASSDGRYEQYF		
4046	CASSDGSYEQYF		
4047	CASSDGTGYEQYF		
4048	CASSDNSGNTLYF		
4049	CASSEGSYEQYF		
4050	CASSGDWGDEQYF		
4051	CASSLTGGAETLYF		
4052	CASSPGSYEQYF		

[00995] To support the characterization of Compound 1 in non-human primates, cross-reactivity was confirmed by measuring the binding of Compound 1 to purified cynomolgus Vβ6 TCR and IL2R proteins. Compound 1 bound to cynomolgus Vβ6-2 (4.9nM), IL2Rα (CD25, 48nM), and IL2Rβγ (3.3nM) with high affinity that was similar to binding with human Vβ6 TCR and IL-2R proteins (**Table S1**). The pharmacokinetics of a single intravenous (IV) dose of Compound 1 was characterized by rapid non-linear clearance over the dose range tested (**FIG. 74**). Further details of Compound 1 pharmacokinetics are shown in **Table S6**.

Table S6. Pharmacokinetic parameters of Compound 1 in cynomolgus monkeys.

	Unit	0.5 mg/kg	1 mg/kg	1.5 mg/kg
T ½	h	5.3	8.1	11.0
Tmax	h	0.25	0.25	6
Cmax	nM	154.3	217.1	297.4
AUC 0-t	nM*h	2712.0	4448.0	7358.4