

1 (NT1) (aNY-TCR α /b)
2 (NT1b) (aNY-TCR β /a)
3 (NT2) (aNY- δ /a28m28Z)
4 (NT3) (aNY- δ /a28m28E)

Fig. 1A

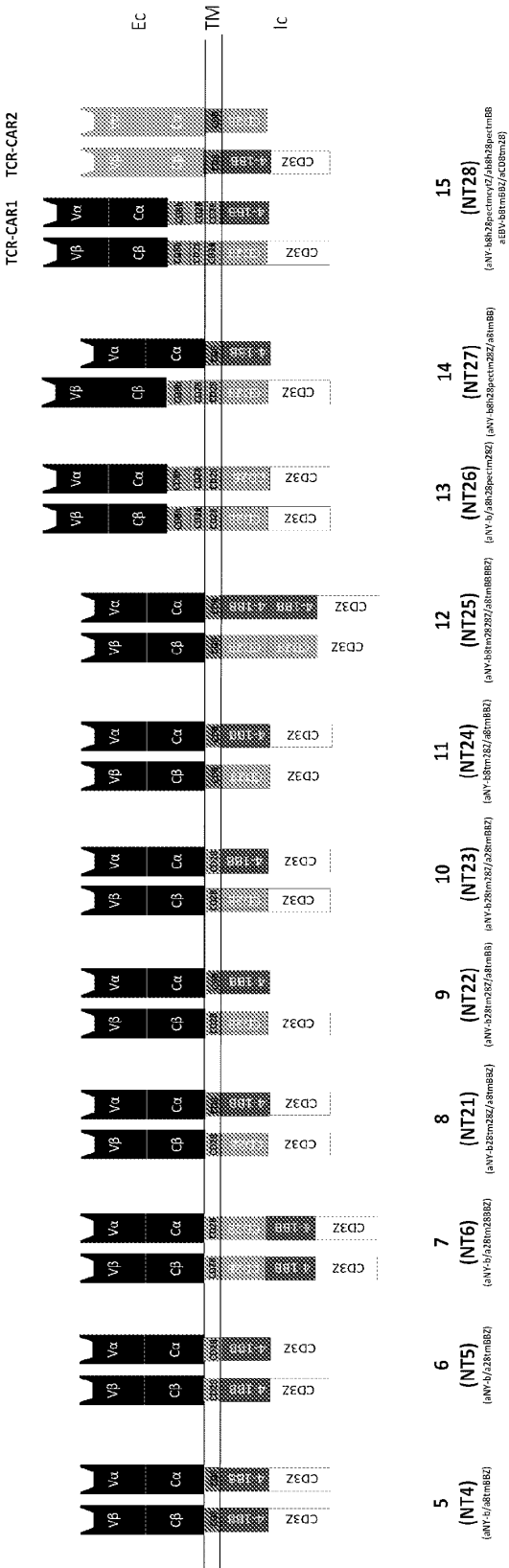
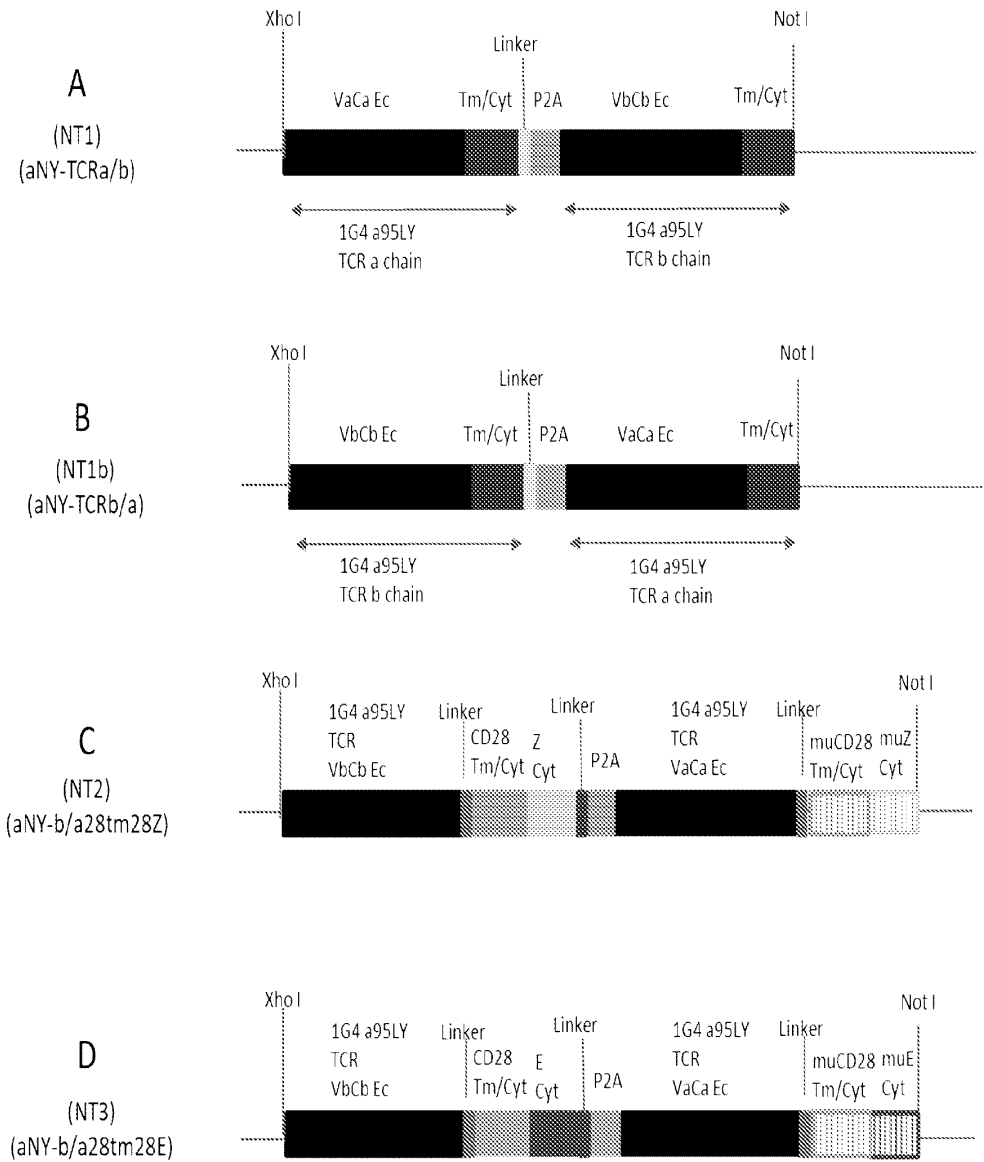


Fig. 1B



Figs. 2A, 2B, 2C, and 2D

Sequence	Name	SEQ ID NO:
METLLGLLILWLQLQWVSSKQEVTPQIPAAHSVPEGENLVLNCSFTDSAIYNLQWFRQDP GKGLTSLLLIQSSQREQTSGRNLNASLDKSSGRSTLYIAASQPGDSATYLCAVRPLYGGSYIP TFGRGTS LIVHPYIQNPDPVAVYQLRDSKSSDKSVCLFTDFDSQTNVSQSKSDVYITDKTV LDMRSMDFKSNSAVAWSNKSDFACANAFNNSIIPEDTFFPSPESS	1G4-a95LY aEc	4
CDVKLVEKSFETDTNLFQNLVIGFRILLKLVAGFNLLMTLRLWSSR	1G4-a95LY aTmCyt	66
AKRSGSG	linker	67
ATNFSLLKQAGDVEENPGP	P2A	3
MSIGLLCCAALSLLWAGPVNAGVTQTPKFQVLKTGQSMTLQCAQDMNHEYMSWYRQ DPGMGLRLIHYSVGAGITDQGEVPNGYNVSRSTTDFPLRLLSAAPSQTSVYFCASSYVG NTGELFFGEGSRLTVLEDLKNVFPPEVAVFEPSEAEISHTQKATLVCLATGFYPDHVELSW WVNGKEVHSGVSTDPQPLKEQPALNDSRYALSSRLRVSATFWQDPRNHFRQCQVQFYGL SENDEWTQDRAKPVTQIVSAEAWGRAD	1G4-a95LY bEc	5
CGFTSESYQQGVLSATILYEILLGKATLYAVLVSAVLMMAMVKRKDSRG	1G4-a95LY bTmCyt	68

Fig. 3A

Sequence	Name	SEQ ID NO:
MSIGLLCCAALSLLWAGPVNAGVTQTPKFQVLKTGQSMTLQCAQDMNHEYMSWYR QDPGMGLRLIHYSVGAGITDQGEVPNGYNVSRSTTDFPLRLLSAAPSQTSVYFCASSY VGNTGELFFGEGSRLTVLEDLKNVFPPEVAVFEPSEAEISHTQKATLVCLATGFYPDHVEL SWWVNGKEVHSGVSTDPQPLKEQPALNDSRYALSSRLRVSATFWQDPRNHFRQCQVQ FYGLSENDEWTQDRAKPVTQIVSAEAWGRAD	1G4-a95LY bEc	5
CGFTSESYQQGVLSATILYEILLGKATLYAVLVSAVLMMAMVKRKDSRG	1G4-a95LY bTmCyt	68
AKRSGSG	linker	67
ATNFSLLKQAGDVEENPGP	P2A	3
METLLGLLILWLQLQWVSSKQEVTPQIPAAHSVPEGENLVLNCSFTDSAIYNLQWFRQDP GKGLTSLLLIQSSQREQTSGRNLNASLDKSSGRSTLYIAASQPGDSATYLCAVRPLYGGSYIP TFGRGTS LIVHPYIQNPDPVAVYQLRDSKSSDKSVCLFTDFDSQTNVSQSKSDVYITDKT VLDMRSMDFKSNSAVAWSNKSDFACANAFNNSIIPEDTFFPSPESS	1G4-a95LY aEc	4
CDVKLVEKSFETDTNLFQNLVIGFRILLKLVAGFNLLMTLRLWSSR	1G4-a95LY aTmCyt	66

Fig. 3B

Sequence	Name (SEQ ID NO)
MSIGLLCCAALLWAGPVNAGVTQTTPKFQVLKTGQSMTLQCAQDMNHEVMSWYRQDPGMGLRIHYSVGAGITDQGEVPNGVNVSRSTTDFPLRLLSAAP SQTSVYFCASSYVGNLTGELFFEGSRLTVLEDLKNVFPPEVAVFEPSEAEISHTQKATLVCLATGFYDPDHVELSWWVNGKEVHSGVSTDPQPLKEQPALNDSRYAL SSRLRVSATFWQDPRNHFRQCQVFYGLSENDEWTDQRAKPVITQVSAEAWGRAD	1G4-a95LY bEc (5)
GSPK	Linker (69)
FWLVVVGGLVACYSLLVTVAFIIFWVRSKRSLRHSDYMNMTPRRPGPTRKHHYQPYAPPRDFAAYRS	CD28TmCyt (6)
RVKFSRSADAPAYQQGQNLVLELNLGRREEVDVLDKRRGRDPEMGGKPRKNPQEGLYNELQDKMAEAYSEIGMKGERRRGKGHDGLYQGLSTATKDTYD ALHMQALPPR	Zcyt (7)
AKRSGSG	Linker (8)
ATNFSLLKQAGDVEENPGP	P2A (3)
METLLGLLILWLQWVSSKQEVTVQIPAAALSVPEGENLVNCSFTDSAIVNLQWFRQDPGKGLTSLLIQSSQREQTSGRNLNASLDKSSGRSTLYIAASQPGDSATYL CAVRPLYGGSYIPTFGRGTSILVHPYIQNPDPVAVYQLRDSKSSDKSVCLFTDFDSQTNVSQSKSDVYITDKTVLDMRSMDFKNSAVAWSNKSDFACANAFNNSI IPEDTFFSPSS	1G4-a95LY aEc (4)
GSPK	Linker (69)
FWLVVVGGLVACYSLLVTVAFIIFWVRSKRSLRHSDYMNMTPRRPGPTRKHHYQPYAPPRDFAAYRS	CD28TmCyt (6)
RVKFSRSADAPAYQQGQNLVLELNLGRREEVDVLDKRRGRDPEMGGKPRKNPQEGLYNELQDKMAEAYSEIGMKGERRRGKGHDGLYQGLSTATKDTYD ALHMQALPPR	Zcyt (7)

Fig. 4

MSIGLLCCAALLWAGPVNAGVTQTTPKFQVLKTGQSMTLQCAQDMNHEVMSWYRQDPGMGLRIHYSVGAGITDQGEVPNGVNVSRSTTDFPLRLLSAAP SQTSVYFCASSYVGNLTGELFFEGSRLTVLEDLKNVFPPEVAVFEPSEAEISHTQKATLVCLATGFYDPDHVELSWWVNGKEVHSGVSTDPQPLKEQPALNDSRYAL SSRLRVSATFWQDPRNHFRQCQVFYGLSENDEWTDQRAKPVITQVSAEAWGRAD	1G4-a95LY bEc (5)
GSPK	Linker (69)
FWLVVVGGLVACYSLLVTVAFIIFWVRSKRSLRHSDYMNMTPRRPGPTRKHHYQPYAPPRDFAAYRS	CD28TmCyt (6)
KNRKAKAKPVTRGAGAGGRQGNKERPPVPNPDPYPIRKGGQDLYSGLNQRI	Ecyt (8)
AKRSGSG	Linker (67)
ATNFSLLKQAGDVEENPGP	P2A (3)
METLLGLLILWLQWVSSKQEVTVQIPAAALSVPEGENLVNCSFTDSAIVNLQWFRQDPGKGLTSLLIQSSQREQTSGRNLNASLDKSSGRSTLYIAASQPGDSATYL CAVRPLYGGSYIPTFGRGTSILVHPYIQNPDPVAVYQLRDSKSSDKSVCLFTDFDSQTNVSQSKSDVYITDKTVLDMRSMDFKNSAVAWSNKSDFACANAFNNSII PEDTFFSPSS	1G4-a95LY aEc (4)
GSPK	Linker (69)
FWLVVVGGLVACYSLLVTVAFIIFWVRSKRSLRHSDYMNMTPRRPGPTRKHHYQPYAPPRDFAAYRS	CD28TmCyt(6)
KNRKAKAKPVTRGAGAGGRQGNKERPPVPNPDPYPIRKGGQDLYSGLNQRI	Ecyt (8)

Fig. 5

muhCD28TmCyt hCD28TmCyt	F W V L V V V G G V L A C Y S L L V T V TTCTGGGTTCTCGTCGTCGTTGGGAGGTGTGTTAGCATGTTACTCTCTCTTGGTTACTGTC TTTTGGGTGCTGGTGGTGGTGGTGGGAGTCCTGGCTTGCTATAGCTTGTAGTAACAGTG *
muhCD28TmCyt hCD28TmCyt	A F I I F W V R S K R S R L L H S D Y M GCTTTCATAATCTTTTGGGTCCGCTCAAAACGCTCTCGCTTGTACATTCCGATTATATG GCCTTTATTATTTTCTGGGTGAGGAGTAAGAGGAGCAGGCTCCTGCACAGTGAATACATG *
muhCD28TmCyt hCD28TmCyt	N M T P R R P G P T R K H Y Q P Y A P P AATATGACACCTAGGAGACCTGGCCCGACTAGGAAACACTATCAACCTTACGCACCTCCC AACATGAATCCCCCGCCCGCCCGGGCCACCCGCAAGCATTACCAGCCCTATGCCCCACCA *
muhCD28TmCyt hCD28TmCyt	R D F A A Y R S AGAGATTTTGTCTGCTTACAGGAGT CGCGACTTCGCAGCCTATCGCTCC * * * * * * * * * *

Fig. 6

muhCD3ZCyt hCD3ZCyt	R V K F S R S A D A P A Y Q Q G Q N Q L CGGGTCAAATTTTCAGCTCCGCTGATGCTCCTGCCTATCAACAAGGGCAAAATCAATTG AGAGTGAAGTTTACGAGGAGCGCAGACGCCCCCGCGTACCAGCAGGGCCAGAACAGCTC *
muhCD3ZCyt hCD3ZCyt	Y N E L N L G R R E E Y D V L D K R R G TACAATGAATTGAATTTGGGTAGAAGGGAAGATATGACGTGCTCGATAAACGGAGGGGG TATAACGAGCTCAATCTAGACGAAGAGAGGAGTACGATGTTTGGACAAGAGACGTGGC *
muhCD3ZCyt hCD3ZCyt	R D P E M G G K P R R K N P Q E G L Y N AGAGATCCAGAAATGGGCGTAAACACGGCGCAAAATCCACAAGAGGGATTGTATAAC CGGGACCCTGAGATGGGGGGAAGCCGAGAAGGAAGAACCTCAGGAAGGCCCTGTACAA *
muhCD3ZCyt hCD3ZCyt	E L Q K D K M A E A Y S E I G M K G E R GAGCTCCAAAAGGACAAAATGGCAGAAGCTTATTCAGAAATAGGAATGAAGGGGGAAAGG GAACTGCAGAAAGATAAGATGGCGGAGGCCTACAGTGAGATGGGATGAAAGGCGAGCGC *
muhCD3ZCyt hCD3ZCyt	R R G K G H D G L Y Q G L S T A T K D T AGACGAGGTAAAGGTCATGACGGATTGTATCAAGGATTGTCAACCGCTACTAAAGATACA CGGAGGGGCAAGGGGCACGATGGCCTTTACCAGGCTCTCAGTACAGCCCAAGGACACC *
muhCD3ZCyt hCD3ZCyt	Y D A L H M Q A L P P R TATGATGCTTTGCATATGCAAGCTTTGCCTCCAGA TACGACGCCCTTCATGCGAGGCCCTGCCCCCTCGC *

Fig. 7

muhCD28TmCytmuCD3ZCyt hCD28TmCytCD3ZCyt	F W V L V V V G G V L A C Y S L L TTCTGGGTTCTCGTCGTCGTTGGGAGGTGTGTAGCATGTTACTCTCTCTT TTTTGGGTGCTGGTGGTGGTGGTGGAGTCCCTGGCTTGCTATAGCTTGCT * * * * *
muhCD28TmCytmuCD3ZCyt hCD28TmCytCD3ZCyt	V T V A F I I F W V R S K R S R L GGTTACTGTGCGCTTTCATAATCTTTTGGGTCCGCTCAAAACGCTCTCGCT AGTAACAGTGGCCTTTATTATTTTCTGGGTGAGGAGTAAGAGGAGCAGGC * * * * *
muhCD28TmCytmuCD3ZCyt hCD28TmCytCD3ZCyt	L H S D Y M N M T P R R P G P T TGTTACATTCCGATTATATGAATATGACACCTAGGAGACCTGGCCCGACT TCCTGCACAGTGACTACATGAACATGACTCCCCGCCGCCCGGGGCCACC * * * * *
muhCD28TmCytmuCD3ZCyt hCD28TmCytCD3ZCyt	R K H Y Q P Y A P P R D F A A Y R AGGAAACACTATCAACCTTACGCACCTCCAGAGATTTTGCTGCTTACAG CGCAAGCATTACCAGCCCTATGCCCGCCACGCGACTTCGCGAGCTATCG * * * * *
muhCD28TmCytmuCD3ZCyt hCD28TmCytCD3ZCyt	S R V K F S R S A D A P A Y Q Q G GAGTCGGGTCAAATTTTACGCTCCGCTGATGCTCCTGCCTATCAACAAG CTCCAGAGTGAAGTTACGACAGGAGCGCAGACGCCCGCGGTACCAGCAGG * * * * *
muhCD28TmCytmuCD3ZCyt hCD28TmCytCD3ZCyt	Q N Q L Y N E L N L G R R E E Y GGCAAAATCAATTGTACAATGAATTGAACTTGGGTAGAAGGAAGAATAT GCCAGAACCAGCTCTATAACGAGCTCAATCTAGGACGAAGAGAGGAGTAC * * * * *
muhCD28TmCytmuCD3ZCyt hCD28TmCytCD3ZCyt	D V L D K R R G R D P E M G G K P GACGTGCTCGATAAACGGAGGGGGAGAGATCCAGAAATGGGCGGTAAACC GATGTTTTGGACAAGAGACGTGGCCGGGACCTGAGATGGGGGGAAGCC * * * * *
muhCD28TmCytmuCD3ZCyt hCD28TmCytCD3ZCyt	R R K N P Q E G L Y N E L Q K D K ACGGCGCAAAATCCACAAGAGGGGATTTGTATAACGAGCTCCAAAAGGACA GAGAAGGAAGAACCCTCAGGAAGGCCTGTACAATGAAGTGCAGAAAGATA * * * * *
muhCD28TmCytmuCD3ZCyt hCD28TmCytCD3ZCyt	M A E A Y S E I G M K G E R R R AAATGGCAGAAGCTTATTCAGAAATAGGAATGAAGGGGGAAGGAGACGA AGATGGCGGAGGCCTACAGTGAAGTGGGATGAAGGCGAGCGCCGAGG * * * * *
muhCD28TmCytmuCD3ZCyt hCD28TmCytCD3ZCyt	G K G H D G L Y Q G L S T A T K D GGTAAGGTGATGACGGATTGTATCAAGGATTGTCAACCGCTACTAAAGA GGCAAGGGGCACGATGGCCTTTACCAGGGTCTCAGTACAGCCACCAAGGA * * * * *
muhCD28TmCytmuCD3ZCyt hCD28TmCytCD3ZCyt	T Y D A L H M Q A L P P R TACATATGATGCTTTGCATATGCAAGCTTTGCCCTCCCA CACCTACGACGCCCTTCACATGCAGGCCCTGCCCTCCG * * * * *

Fig. 8

MuCD3ECyt	K N R K A K A K P V T R G A G A G
hCD3ECyt_c119_NM_000733.1	AAAAACCGCAAAGCTAAAGCTAAACCCGTCAC TAGGGGGGCGGAGCAGG
	*** ** *
MuCD3ECyt	G R Q R G Q N K E R P P P V P N P
hCD3ECyt_c119_NM_000733.1	AGGGCGCCAGCGCGGT CAGAATAAAGAACGCCCTCCTCCCGTCCCTAATC
	** * ** * ** *
MuCD3ECyt	D Y E P I R K G Q R D L Y S G L
hCD3ECyt_c119_NM_000733.1	CTGATTACGAACCGATTAGAAAGGGGCAAAGAGATCTCTACAGCGGACTC
	* ** * ** * ** * ** * ** * ** *
MuCD3ECyt	N Q R R I
hCD3ECyt_c119_NM_000733.1	AACCAACGGAGAATT
	** ** *

Fig. 9

a.a. seq.	R V K F S R S A D A P A Y Q Q G Q N Q L
hCD3ZCyt 1	AGAGTGAAGTTTCAGCAGGAGCGCAGACGCCCGCGTAC CAGCAGGGGCCAGAACCAGCTC
Mu2hCD3ZCyt 1	CGGGTCAAATTTTCACGCTCCGCTGATGCTCCTGCCTATCAACAAGGGCAAAATCAATTG
a.a. seq.	Y N E L N L G R R E E Y D V L D K R R G
hCD3ZCyt 61	TATAACGAGCTCAATCTAGGACGAAGAGAGGAGTACGATGTTTGGACAAGAGACGTGGC
Mu2hCD3ZCyt 61	TACAATGAATTGAAC TTGGGTAGAAGGGAAGAATATGACGTGCTCGATAAACGGAGGGGG
a.a. seq.	R D P E M G G K P R R K N P Q E G LY N
hCD3ZCyt 121	CGGGACCTGAGATGGGGGAAAGCCGAGAAGGAAGAACCTCAGGAAGGCCTGTACAAT
Mu2hCD3ZCyt 121	AGAGATCCAGAAATGGGCGGTAAACCACGGCGCAAAAATCCACAAGAGGGATTGTATAAC
a.a. seq.	E L Q K D K M A E A Y S E I G M K G E R
hCD3ZCyt 181	GAAGTGCAGAAAGATAAGATGGCGGAGGCCTACAGTGAGATTGGGATGAAAGGCAGCGC
Mu2hCD3ZCyt 181	GAGCTCCAAAAGGACAAAATGGCAGAAGCTTATTCAGAAATAGGAATGAAGGGGGAAAGG
a.a. seq.	R R G K G H D G L Y Q G L S T A T K D T
hCD3ZCyt 241	CGGAGGGGCAAGGGGCACGATGGCCTTTACCAGGGTCTCAGTACAGCCACCAAGGACACC
Mu2hCD3ZCyt 241	AGACGAGGTAAAGGT CATGACGGATTGTATCAAGGATTGTCAACCGCTACTAAAGATACA
a.a. seq.	Y D A L H M Q A L P P R
hCD3ZCyt 301	TACGACGCCCTTCACATGCAGGCCCTGCCCCCTCGC 336
Mu2hCD3ZCyt 301	TATGATGCTTTGCATATGCAAGCTTTGCCTCCCGA 336

Fig. 10

Fig. 11Fig. 12Fig. 13

Fig. 14Fig. 15

Sequence	Name (SEQ ID NO)
MSIGLLCCAALLWAGPVNAGVTQTPKFQVLKTGQSMTLQCAQDMNHEYMSWYRQDPGMGLRL IHYSVGAGITDQGEVPNGYNVSRSTTDFPLRLLSAAPSQTSVYFCASSYVGNTEGELFFEGESRLTVLED LKNVFPPEVAVFEPSEAEISHTQKATLVCLATGFYPDHVELSWVWNGKEVHSGVSTDPQLKEQPAL NDSRYALSSRLRVSATFWQDPRNHFRQCQVQFYGLSENDEWTDRAKPVTVQIVSAEAWGRAD	1G4-a95LY bEc (5)
GSPK	linker (69)
CDIYWAPLAGTCGVLLLSLVITLYC	CD8tm (31)
KRGRKKLLYIFKQPFMRPVQTTQEEDGCSCRFPEEEEGGCEL	BBcyt (29)
RVKFSRSADAPAYQQGQNQLYNELNLGRREEYDVLDRRGRDPEMGGKPRRKNPQEGLYNELQKD KMAEAYSEIGMKGERRRGKGHDGLYQGLSTATKDTYDALHMQALPPR	Zcyt (7)
AKRSGSG	linker (67)
ATNFSLLKQAGDVEENPGP	P2A (3)
METLLGLLILWLQLQWVSSKQEVTVQIPAALSVPEGENLVNCSFTDSAIYNLQWFRQDPGKGLTSLLLI QSSQREQTSGRNLASLDKSSGRSTLYIAASQPGDSATYLCAVRPLYGGSYIPTFGRGTSLVHPYIQNP PAVYQLRDSKSSDKSVCLFTDFDSQTNVSQSKSDVYITDKTVLDMRSMDFKSNASAVAWSNKSDFAC ANAFNNSIIPEDTFFPSPESS	1G4-a95LY aEc (4)
GSPK	linker (69)
CDIYWAPLAGTCGVLLLSLVITLYC	CD8tm (31)

Fig. 16

Sequence	Name (SEQ ID NO)
MSIGLLCCAALLWAGPVNAGVTQTPKFQVLKTGQSMTLQCAQDMNHEYMSWYRQDPGMGLRLI HYSVGAGITDQGEVPNGYNVSRSTTDFPLRLLSAAPSQTSVYFCASSYVGNTEGELFFEGESRLTVLEDL KNVFPPEVAVFEPSEAEISHTQKATLVCLATGFYPDHVELSWVWNGKEVHSGVSTDPQLKEQPALND SRYALSSRLRVSATFWQDPRNHFRQCQVQFYGLSENDEWTDRAKPVTVQIVSAEAWGRAD	1G4-a95LY bEc (5)
GSPK	linker (69)
FWVLVVVGGVLACYSLLVTVAFIIFWV	CD28tm (27)
KRGRKKLLYIFKQPFMRPVQTTQEEDGCSCRFPEEEEGGCEL	BBcyt (29)
RVKFSRSADAPAYQQGQNQLYNELNLGRREEYDVLDRRGRDPEMGGKPRRKNPQEGLYNELQKDK MAEAYSEIGMKGERRRGKGHDGLYQGLSTATKDTYDALHMQALPPR	Zcyt (7)
AKRSGSG	linker (67)
ATNFSLLKQAGDVEENPGP	P2A (3)
METLLGLLILWLQLQWVSSKQEVTVQIPAALSVPEGENLVNCSFTDSAIYNLQWFRQDPGKGLTSLLLI SSQREQTSGRNLASLDKSSGRSTLYIAASQPGDSATYLCAVRPLYGGSYIPTFGRGTSLVHPYIQNP PAVYQLRDSKSSDKSVCLFTDFDSQTNVSQSKSDVYITDKTVLDMRSMDFKSNASAVAWSNKSDFACAN AFNNSIIPEDTFFPSPESS	1G4-a95LY aEc (4)
GSPK	linker (69)
FWVLVVVGGVLACYSLLVTVAFIIFWV	CD28tm (27)
KRGRKKLLYIFKQPFMRPVQTTQEEDGCSCRFPEEEEGGCEL	BBcyt (29)
RVKFSRSADAPAYQQGQNQLYNELNLGRREEYDVLDRRGRDPEMGGKPRRKNPQEGLYNELQKDK MAEAYSEIGMKGERRRGKGHDGLYQGLSTATKDTYDALHMQALPPR	Zcyt (7)

Fig. 17

Sequence	Name (SEQ ID NO)
MSIGLLCCAALLWAGPVNAGVTQTPKFQVLKGTQSMTLQCAQDMNHEYMSWYRQDPGMGLRLIHY SVGAGITDQGEVPNGYNVSRSTTEDFPLRLLSAAPSQTSVYFCASSYVGNTGELFFGEGSRLTVLEDLKNVF PPEVAVFEPSEAEISHTQKATLVCLATGFYPDHVELSWVWNGKEVHSGVSTDPQPLKEQPALNDSRYALSS RLRVSATFWQDPRNHFRCQVQFYGLSENDEWTQDRAKPVTVQIVSAEAWGRAD	1G4-a95LY bEc (5)
GSPK	linker (69)
FWVLVVVGVLACYSLLVTVAFIIFWV	CD28tm (27)
RSKRSLHSDYMNMTPRRPGPTRKHYQPYAPPRDFAAYRS	CD28cyt (28)
KRGRKKLLYIFKQPFMRPVQTTQEEDGCSCRFEEEEGGCEL	BBcyt (29)
RVKFSRSADAPAYQQGQNQLYNELNLGRREEYDVLDRRGRDPEMGGKPRRKNPQEGLYNELQKDKM AEAYSEIGMKGERRRGKGGHDGLYQGLSTATKDTYDALHMQALPPR	Zcyt (7)
AKRSGSG	linker (67)
ATNFSLLKQAGDVEENPGP	P2A (3)
METLLGLLILWLQLQWVSSKQEVTVQIPAALSVPEGENLVNCSFTDSAIYNLQWFRQDPGKGLTSLLLIQSS QREQTSGRLNASLDKSSGRSTLYAASQPGDSATYLC AVRPLYGGSYIPTFGRGTS LIVHPYIQNPDPAYVYL RDSKSSDKSVCLFTDFDSQTNVSQSKSDSVYITDKTVLDMRSMDFKNSAVAWSNKSDFACANAFNNSII PEDTFFPSPESS	1G4-a95LY aEc (4)
GSPK	linker (69)
FWVLVVVGVLACYSLLVTVAFIIFWV	CD28tm (27)
RSKRSLHSDYMNMTPRRPGPTRKHYQPYAPPRDFAAYRS	CD28cyt (28)
KRGRKKLLYIFKQPFMRPVQTTQEEDGCSCRFEEEEGGCEL	BBcyt (29)
RVKFSRSADAPAYQQGQNQLYNELNLGRREEYDVLDRRGRDPEMGGKPRRKNPQEGLYNELQKDKM AEAYSEIGMKGERRRGKGGHDGLYQGLSTATKDTYDALHMQALPPR	Zcyt (7)

Fig. 18

Sequence	Name (SEQ ID NO)
MSIGLLCCAALLWAGPVNAGVTQTPKFQVLKGTQSMTLQCAQDMNHEYMSWYRQDPGMGLRLI HYSVGAGITDQGEVPNGYNVSRSTTEDFPLRLLSAAPSQTSVYFCASSYVGNTGELFFGEGSRLTVLEDLK NVFPPEVAVFEPSEAEISHTQKATLVCLATGFYPDHVELSWVWNGKEVHSGVSTDPQPLKEQPALNDSR YALSSRLRVSATFWQDPRNHFRCQVQFYGLSENDEWTQDRAKPVTVQIVSAEAWGRAD	1G4-a95LY bEc (5)
GSPK	linker (69)
FWVLVVVGVLACYSLLVTVAFIIFWV	CD28tm (27)
RSKRSLHSDYMNMTPRRPGPTRKHYQPYAPPRDFAAYRS	CD28cyt (28)
RVKFSRSADAPAYQQGQNQLYNELNLGRREEYDVLDRRGRDPEMGGKPRRKNPQEGLYNELQKDK MAEAYSEIGMKGERRRGKGGHDGLYQGLSTATKDTYDALHMQALPPR	Zcyt (7)
AKRSGSG	linker (67)
ATNFSLLKQAGDVEENPGP	P2A (3)
METLLGLLILWLQLQWVSSKQEVTVQIPAALSVPEGENLVNCSFTDSAIYNLQWFRQDPGKGLTSLLLIQ SSQREQTSGRLNASLDKSSGRSTLYAASQPGDSATYLC AVRPLYGGSYIPTFGRGTS LIVHPYIQNPDP AVYQLRDSKSSDKSVCLFTDFDSQTNVSQSKSDSVYITDKTVLDMRSMDFKNSAVAWSNKSDFACANAF NNSIIPEDTFFPSPESS	1G4-a95LY aEc (4)
GSPK	linker (69)
CDIYIWAPLAGTCGVLLSLVITLYC	CD8tm (31)
KRGRKKLLYIFKQPFMRPVQTTQEEDGCSCRFEEEEGGCEL	BBcyt (29)
RVKFSRSADAPAYQQGQNQLYNELNLGRREEYDVLDRRGRDPEMGGKPRRKNPQEGLYNELQKDK MAEAYSEIGMKGERRRGKGGHDGLYQGLSTATKDTYDALHMQALPPR	Zcyt (7)

Fig. 19

Sequence	Name (SEQ ID NO)
MSIGLLCCAALLWAGPVNAGVTQTPKFQVLKTGQSMTLQCAQDMNHEYMSWYRQDPGMGLRLIHYSV GAGITDQGEVPNGYNVSRSTTDFPLRLLSAAPSQTSVYFCASSYVGNTGELFFGEGSRLTVLEDLKNVFPPEVA VFEPSEAEISHTQKATLVCLATGFYPDHVELSWVWNGKEVHSGVSTDPQPLKEQPALNDSRYALSSRLRVSATF WQDPRNHFRQCQVQFYGLSENDEWTQDRAKPVTVQVSAEAWGRAD	1G4-a95LY bEc (5)
GSPK	linker (69)
FWVLVVVGGVLACYSLLVTVAFIIFWV	CD28tm (27)
RSKRSRLHSDYMNMTPRRPGPTRKHYPYAPPRDFAAYRS	CD28cyt (28)
RVKFSRSADAPAYQQGQNQLYNELNLGRREEYDVLDRRGRDPEMGGKPRRKNPQEGLYNELQKDKMAEA YSEIGMKGERRRGKGHDGLYQGLSTATKDTYDALHMQALPPR	Zcyt (7)
AKRSGSG	linker (67)
ATNFSLLKQAGDVEENPGP	P2A (3)
METLLGLLILWLQLQWVSSKQEVTVQIPAAHSVPEGENLVNCSFTDSAIYNLQWFRQDPGKGLTSLLIQSSQR EQTSGRNLASLDKSSGRSTLYIAASQPGDSATYLC AVRPLYGGSYIPTFGRGTSLVHPYIQNPDPVAVYQLRDSKS SDKSVCLFTDFDSQTNVVSQKSDVYITDKTVLDMRSMDFKNSAVAWSNKSDFACANAFNNSIIPEDTFFPS PESS	1G4-a95LY aEc (4)
GSPK	linker (69)
CDIYIWAPLAGTCGVLLSLVITLYC	CD8tm (31)
KRGRKKLLYIFKQPFMRPVQTTQEEDGCSCRFPEEEGGCEL	BBcyt (29)

Fig. 20

Sequence	Name (SEQ ID NO)
MSIGLLCCAALLWAGPVNAGVTQTPKFQVLKTGQSMTLQCAQDMNHEYMSWYRQDPGMGLRLIHYSV GAGITDQGEVPNGYNVSRSTTDFPLRLLSAAPSQTSVYFCASSYVGNTGELFFGEGSRLTVLEDLKNVFPPEVA VFEPSEAEISHTQKATLVCLATGFYPDHVELSWVWNGKEVHSGVSTDPQPLKEQPALNDSRYALSSRLRVSATF WQDPRNHFRQCQVQFYGLSENDEWTQDRAKPVTVQVSAEAWGRAD	1G4-a95LY bEc (5)
GSPK	linker (69)
FWVLVVVGGVLACYSLLVTVAFIIFWV	CD28tm (27)
RSKRSRLHSDYMNMTPRRPGPTRKHYPYAPPRDFAAYRS	CD28cyt (28)
RVKFSRSADAPAYQQGQNQLYNELNLGRREEYDVLDRRGRDPEMGGKPRRKNPQEGLYNELQKDKMAEA YSEIGMKGERRRGKGHDGLYQGLSTATKDTYDALHMQALPPR	Zcyt (7)
AKRSGSG	linker (67)
ATNFSLLKQAGDVEENPGP	P2A (3)
METLLGLLILWLQLQWVSSKQEVTVQIPAAHSVPEGENLVNCSFTDSAIYNLQWFRQDPGKGLTSLLIQSSQR EQTSGRNLASLDKSSGRSTLYIAASQPGDSATYLC AVRPLYGGSYIPTFGRGTSLVHPYIQNPDPVAVYQLRDSKS SDKSVCLFTDFDSQTNVVSQKSDVYITDKTVLDMRSMDFKNSAVAWSNKSDFACANAFNNSIIPEDTFFPS PESS	1G4-a95LY aEc (4)
GSPK	linker (69)
FWVLVVVGGVLACYSLLVTVAFIIFWV	CD28tm (27)
KRGRKKLLYIFKQPFMRPVQTTQEEDGCSCRFPEEEGGCEL	BBcyt (29)
RVKFSRSADAPAYQQGQNQLYNELNLGRREEYDVLDRRGRDPEMGGKPRRKNPQEGLYNELQKDKMAEA YSEIGMKGERRRGKGHDGLYQGLSTATKDTYDALHMQALPPR	Zcyt (7)

Fig. 21

Sequence	Name (SEQ ID NO)
MSIGLLCCAALLWAGPVNAGVTQTPKFQVLKGTQSMTLQCAQDMNHEYMSWYRQDPGMGLRLI HYSVGAGITDQGEVPGNGYNVSRSTTEDFPLRLLSAAPSQTSVYFCASSYVGNTGELFFGEGSRLTVLEL KNVFPPEVAVFEPSEAEISHTQKATLVCLATGFYPDHVELSWVWNGKEVHSGVSTDPQPLKEQPALND SRYALSSRLRVSATFWQDPRNHFRQCQVQFYGLSENDEWTQDRAKPVTVQVSAEAWGRAD	1G4-a95LY bEc (5)
GSPK	linker (69)
CDIYWAPLAGTCGVLLLSLVITLYC	CD8tm (31)
RSKRSRLLHSDYMNMTPRRPGPTRKHYQPYAPPRDFAAYRS	CD28cyt (28)
RVKFSRSADAPAYQQGQNQLYNELNLGRREEYDVLDKRRGRDPEMGGKPRRKNPQEGLYNELQKDK MAEAYSEIGMKGERRRGKGHDGLYQGLSTATKDTYDALHMQALPPR	Zcyt (7)
AKRSGSG	linker (67)
ATNFSLLKQAGDVEENPGP	P2A (3)
METLLGLLILWLQWVSSKQEVTVQIPAALSVPGENLVNCSFTDSAIYNLQWFRQDPGKGLTSLLIQ SSQREQTSGRNLNASLDKSSGRSTLYAASQPGDSATYLCAVRPLYGGSYIPTFGRGTSLVHPYIQNPDP VYQLRDSKSSDKSVCLFTDFDSQTNVSQSKSDVYITDKTVLDMRSMDFKSNSAVAWSNKSDFACANA FNNSIIPEDTFFPSPSS	1G4-a95LY aEc (4)
GSPK	linker (69)
CDIYWAPLAGTCGVLLLSLVITLYC	CD8tm (31)
KRGRKKLLYIFKQPFMRPVQTTQEEDGCSCRFPEEEEGGCEL	BBcyt (29)
RVKFSRSADAPAYQQGQNQLYNELNLGRREEYDVLDKRRGRDPEMGGKPRRKNPQEGLYNELQKDK MAEAYSEIGMKGERRRGKGHDGLYQGLSTATKDTYDALHMQALPPR	Zcyt (7)

Fig. 22

Sequence	Name (SEQ ID NO)
MSIGLLCCAALLWAGPVNAGVTQTPKFQVLKGTQSMTLQCAQDMNHEYMSWYRQDPGMGLRLI LIHYSVGAGITDQGEVPGNGYNVSRSTTEDFPLRLLSAAPSQTSVYFCASSYVGNTGELFFGEGSRLTVLE DLKNVFPPEVAVFEPSEAEISHTQKATLVCLATGFYPDHVELSWVWNGKEVHSGVSTDPQPLKEQPA LND SRYALSSRLRVSATFWQDPRNHFRQCQVQFYGLSENDEWTQDRAKPVTVQVSAEAWGRAD	1G4-a95LY bEc (5)
GSPK	linker (69)
CDIYWAPLAGTCGVLLLSLVITLYC	CD8tm (31)
RSKRSRLLHSDYMNMTPRRPGPTRKHYQPYAPPRDFAAYRS	CD28cyt (28)
RSKRSRLLHSDYMNMTPRRPGPTRKHYQPYAPPRDFAAYRS	CD28cyt (28)
RVKFSRSADAPAYQQGQNQLYNELNLGRREEYDVLDKRRGRDPEMGGKPRRKNPQEGLYNELQKD KMAEAYSEIGMKGERRRGKGHDGLYQGLSTATKDTYDALHMQALPPR	Zcyt (7)
AKRSGSG	linker (67)
ATNFSLLKQAGDVEENPGP	P2A (3)
METLLGLLILWLQWVSSKQEVTVQIPAALSVPGENLVNCSFTDSAIYNLQWFRQDPGKGLTSLLI QSSQREQTSGRNLNASLDKSSGRSTLYAASQPGDSATYLCAVRPLYGGSYIPTFGRGTSLVHPYIQNP PAVYQLRDSKSSDKSVCLFTDFDSQTNVSQSKSDVYITDKTVLDMRSMDFKSNSAVAWSNKSDFAC ANAFNNSIIPEDTFFPSPSS	1G4-a95LY aEc (4)
GSPK	linker (69)
CDIYWAPLAGTCGVLLLSLVITLYC	CD8tm (31)
KRGRKKLLYIFKQPFMRPVQTTQEEDGCSCRFPEEEEGGCEL	BBcyt (29)
KRGRKKLLYIFKQPFMRPVQTTQEEDGCSCRFPEEEEGGCEL	BBcyt (29)
RVKFSRSADAPAYQQGQNQLYNELNLGRREEYDVLDKRRGRDPEMGGKPRRKNPQEGLYNELQKD KMAEAYSEIGMKGERRRGKGHDGLYQGLSTATKDTYDALHMQALPPR	Zcyt (7)

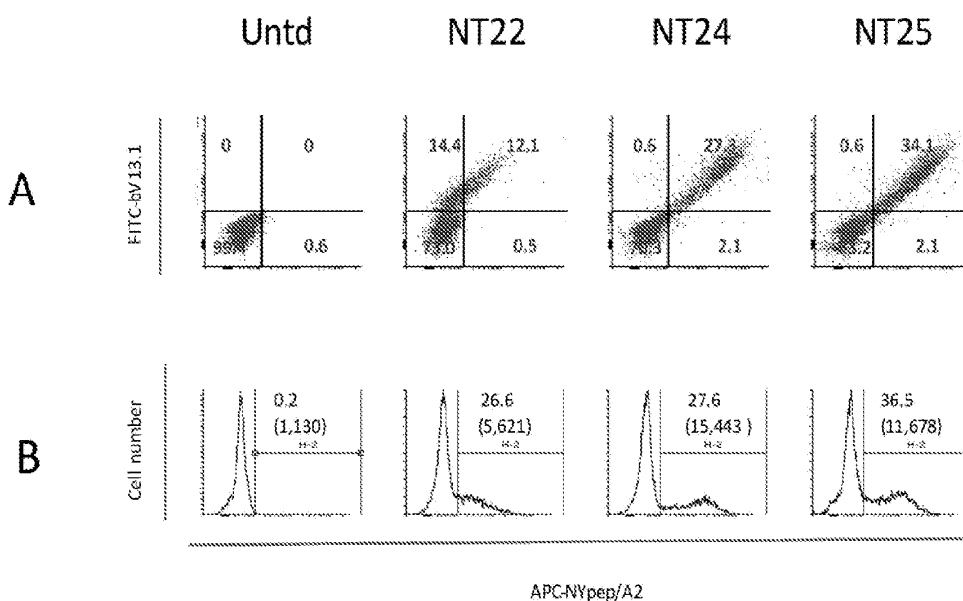
Fig. 23

Sequence	Name (SEQ ID NO)
MSIGLLCCAALLWAGPVNAGVTQTPKFQVLKTGQSMTLQCAQDMNHEYMSWYRQDPGMGLRLIH YSVGAGITDQGEVPNGYNVSRSTTEDFPLRLLSAAPSQTSVYFCASSYVGNTGELFFGEGSRLTVLEDLKN VFPPEVAVFEPSEAEISHTQKATLVCLATGFYPDHVELSWVWNGKEVHSGVSTDPQLKEQPALNDSRY ALSSRLRVSATFWQDPRNHFRQCQVQFYGLSENDEWTQDRAKPVTVQIVSAEAWGRAD	1G4-a95LY bEc (5)
GSPK	linker (69)
AKPTTTPAPRPPTPAPTIASQPLSLRPEACRPAAGGAVHTRGLDFA	CD8hinge (30)
PR	Linker (AvrII site) (70)
KIEVMYPPPYLDNEKSNGTIIHVKGKHLCPSPFPGPSKP	CD28pec (26)
FWVLVVVGGVLACYLLVTVAFIIFWV	CD28tm (27)
RSKRSRLHSDYMNMTPRRPGPTRKHYPYAPPRDFAAYRS	CD28cyt (28)
RVKFSRSADAPAYQQGQNQLYNELNLGRREEYDVLDRRRGRDPEMGGKPRRKNPQEGLYNELQKDKM AEAYSEIGMKGERRRGKGHDGLYQGLSTATKDTYDALHMQALPPR	Zcyt (7)
AKRSGSG	linker (67)
ATNFSLLKQAGDVEENPGP	P2A (3)
METLLGLLILWLQLQWVSSKQEVTPQAALSVPENLVLNCSFTDSAIYNLQWFRQDPGKGLTSLLLIQS SQREQTSGRNLNASLDKSSGRSTLYAASQPGDSATYLCAVRPLYGGSYIPTFGRGTSLIVHPYIQNPDPVY QLRDSKSSDKSVCLFTDFDSQTNVSQSKSDVYITDKTVLDMRSMDFKNSAVAWSNKSDFACANAFN NSIIPEDTFFPSPSS	1G4-a95LY aEc (4)
GSPK	linker (69)
AKPTTTPAPRPPTPAPTIASQPLSLRPEACRPAAGGAVHTRGLDFA	CD8hinge (30)
PR	Linker (AvrII site) (70)
KIEVMYPPPYLDNEKSNGTIIHVKGKHLCPSPFPGPSKP	CD28pec (26)
FWVLVVVGGVLACYLLVTVAFIIFWV	CD28tm (27)
RSKRSRLHSDYMNMTPRRPGPTRKHYPYAPPRDFAAYRS	CD28cyt (28)
RVKFSRSADAPAYQQGQNQLYNELNLGRREEYDVLDRRRGRDPEMGGKPRRKNPQEGLYNELQKDKM AEAYSEIGMKGERRRGKGHDGLYQGLSTATKDTYDALHMQALPPR	Zcyt (7)

Fig. 24

Sequence	Name (SEQ ID NO)
MSIGLLCCAALLWAGPVNAGVTQTPKFQVLKTGQSMTLQCAQDMNHEYMSWYRQDPGMGLR LIHYSVGAGITDQGEVPNGYNVSRSTTEDFPLRLLSAAPSQTSVYFCASSYVGNTGELFFGEGSRLTVL EDLKNVFPPEVAVFEPSEAEISHTQKATLVCLATGFYPDHVELSWVWNGKEVHSGVSTDPQPLKEQP ALNDSRYALSSRLRVSATFWQDPRNHFRQCQVQFYGLSENDEWTQDRAKPVTVQIVSAEAWGRAD	1G4-a95LY bEc (5)
GSPK	linker (69)
AKPTTTPAPRPPTPAPTASQPLSLRPEACRPAAGGAVHTRGLDFA	CD8hinge (30)
PR	Linker (AvrII site) (70)
KIEVMYPPPYLDNEKSNGTIIHVKGKHLCPSPLEFGPSKP	CD28pec (26)
FWVLVVVGGLVACYSLLVTVAFIIFWV	CD28tm (27)
RSKRSRLHSDYMNMTPRRPGPTRKHYPYAPPRDFAAYRS	CD28cyt (28)
RVKFSRSADAPAYQQGQNQLYNELNLRREEYDVLDRRGRDPEMGGKPRRKNPQEGLYNELQKD KMAEAYSEIGMKGERRRGKGHDGLYQGLSTATKDTYDALHMQALPPR	Zcyt (7)
AKRSGSG	linker (67)
ATNFSLLKQAGDVEENPGP	P2A (3)
METLLGLLWLQLQWVSSKQEVTVQIPAALSVPEGENLVLNCSFTDSAIYNLQWFRQDPGKGLTSLLLI QSSQREQTSGRLNASLDKSSGRSTLYIAASQPGDSATYLCAVRPLYGGSIPTFGRGTSLIVHPYIQNPD PAVYQLRDSKSSDKSVCLFTDFDSQTNVSQSKSDVYITDKTVLDMRSMDFKNSAVAWSNKSDFA CANAFNNSIIPEDTFFPSPESS	1G4-a95LY aEc (4)
GSPK	linker (69)
CDIYIWAPLAGTCGVLLLSLVITLYC	CD8tm (31)
KRGRKKLLYIFKQPFMRPVQTTQEEDGCSCRFPEEEGGCEL	BBcyt (29)

Fig. 25



Figs. 26A and 26B

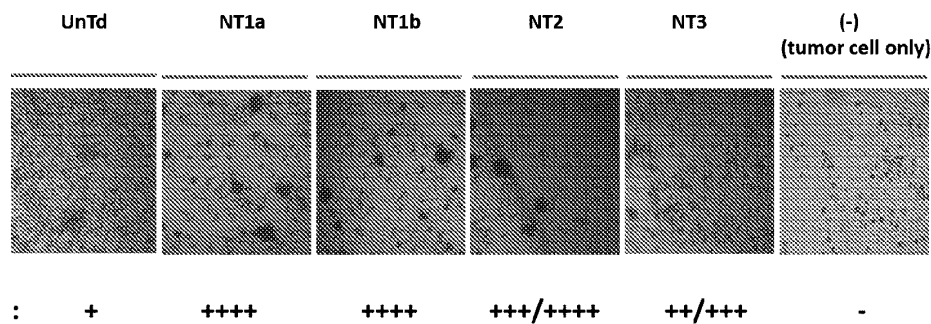
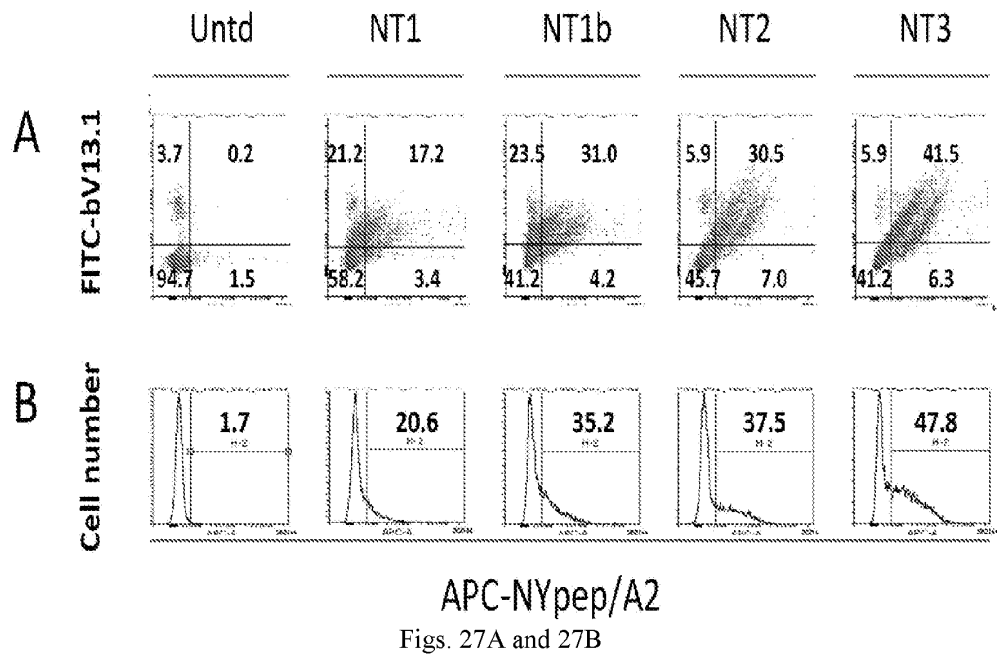
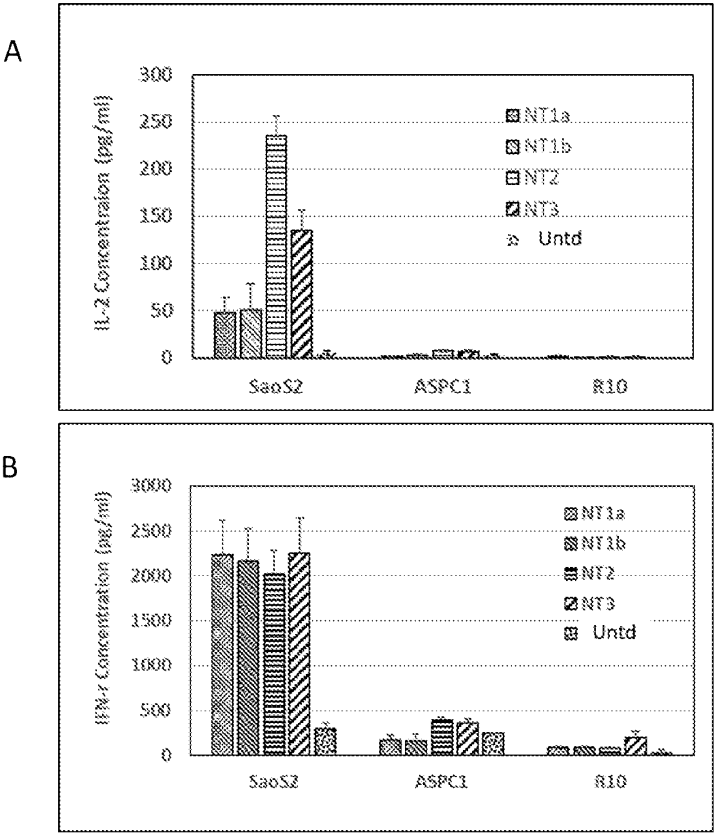


Fig. 28



Figs. 29A and 29B

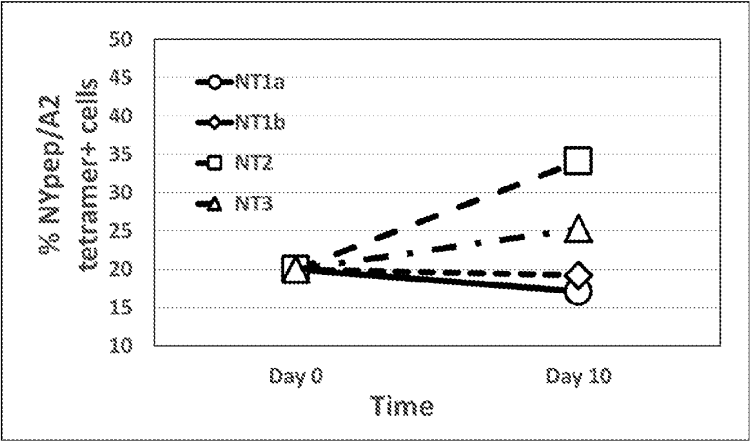
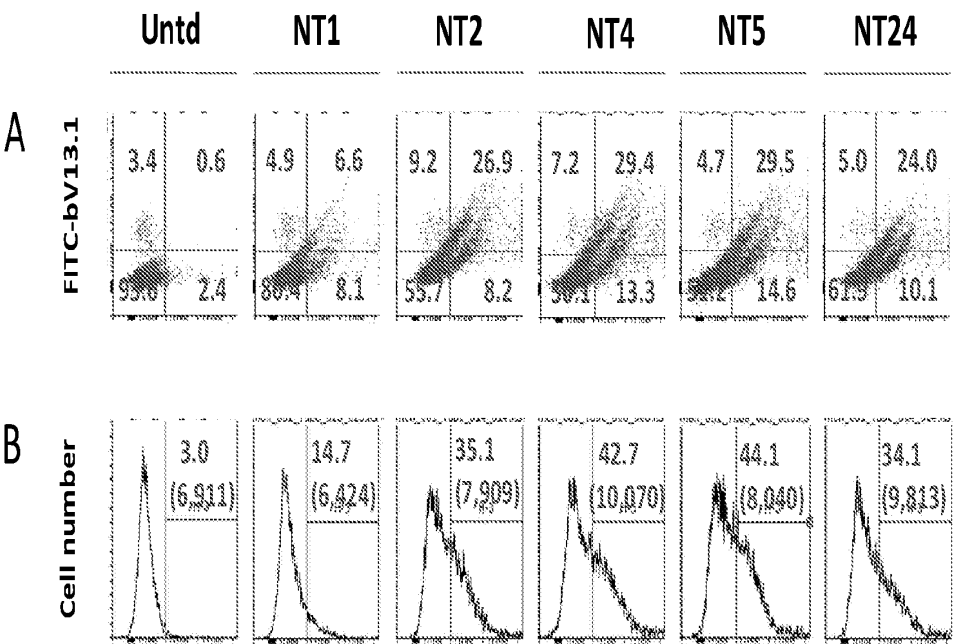


Fig. 30



Figs. 31A and 31B

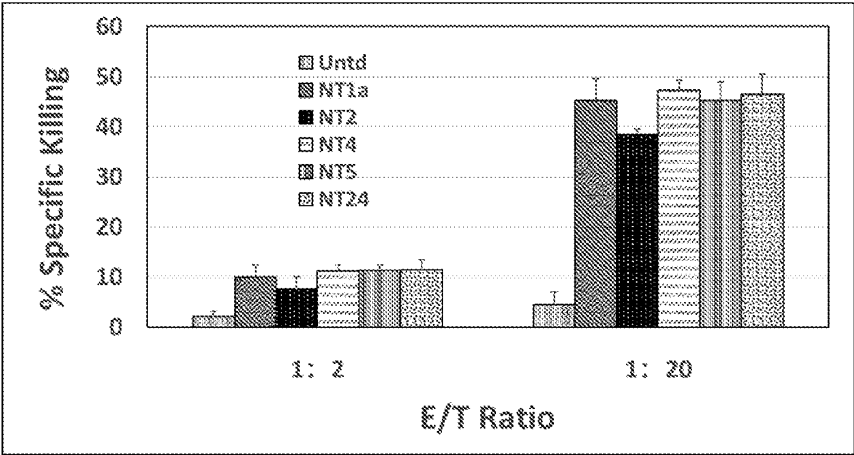
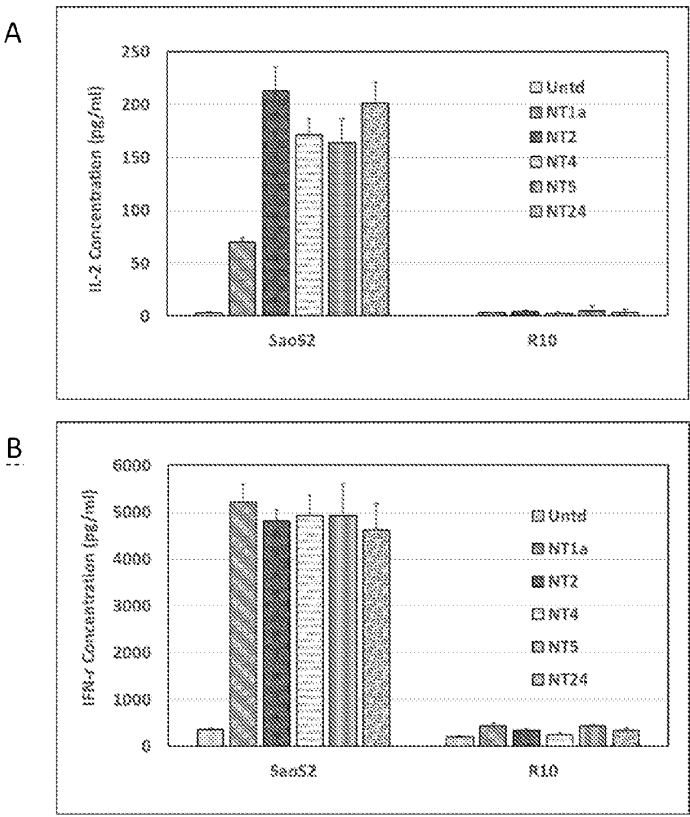
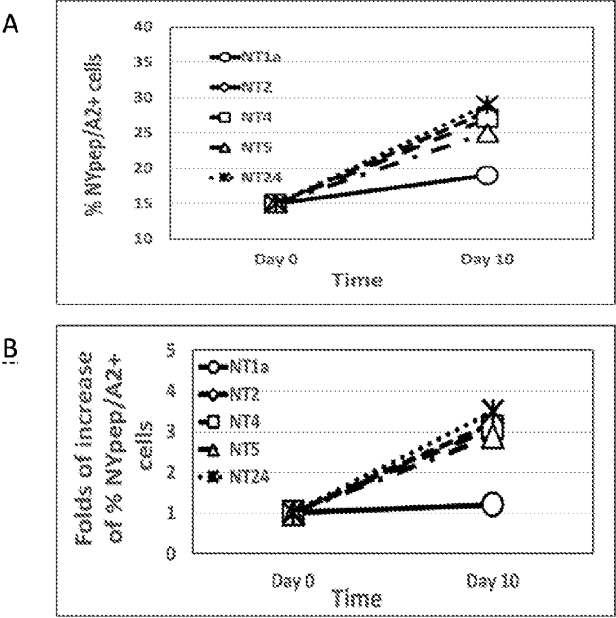


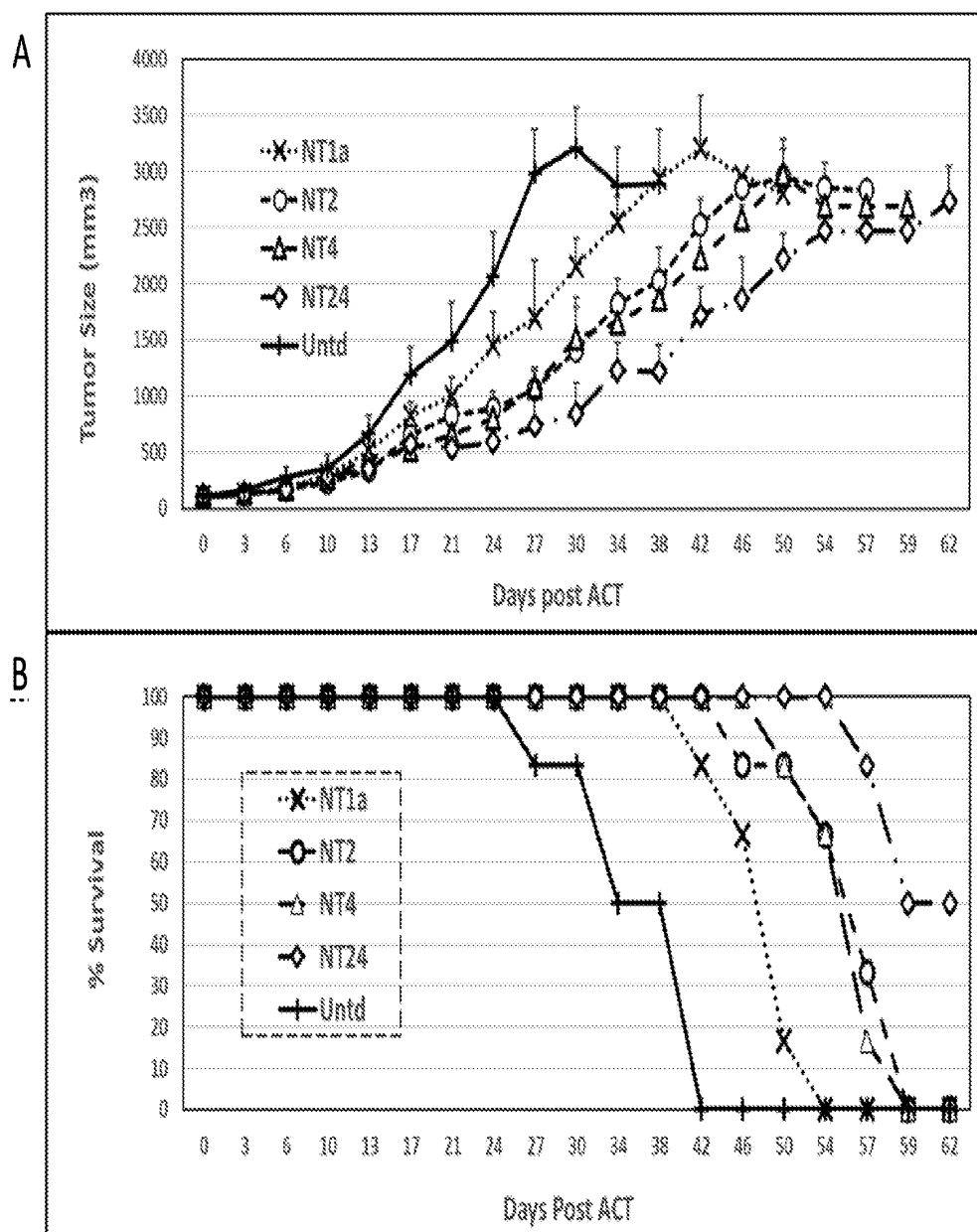
Fig. 32



Figs. 33A and 33B



Figs. 34A and 34B



Figs. 35A and 35B