

Figure 1

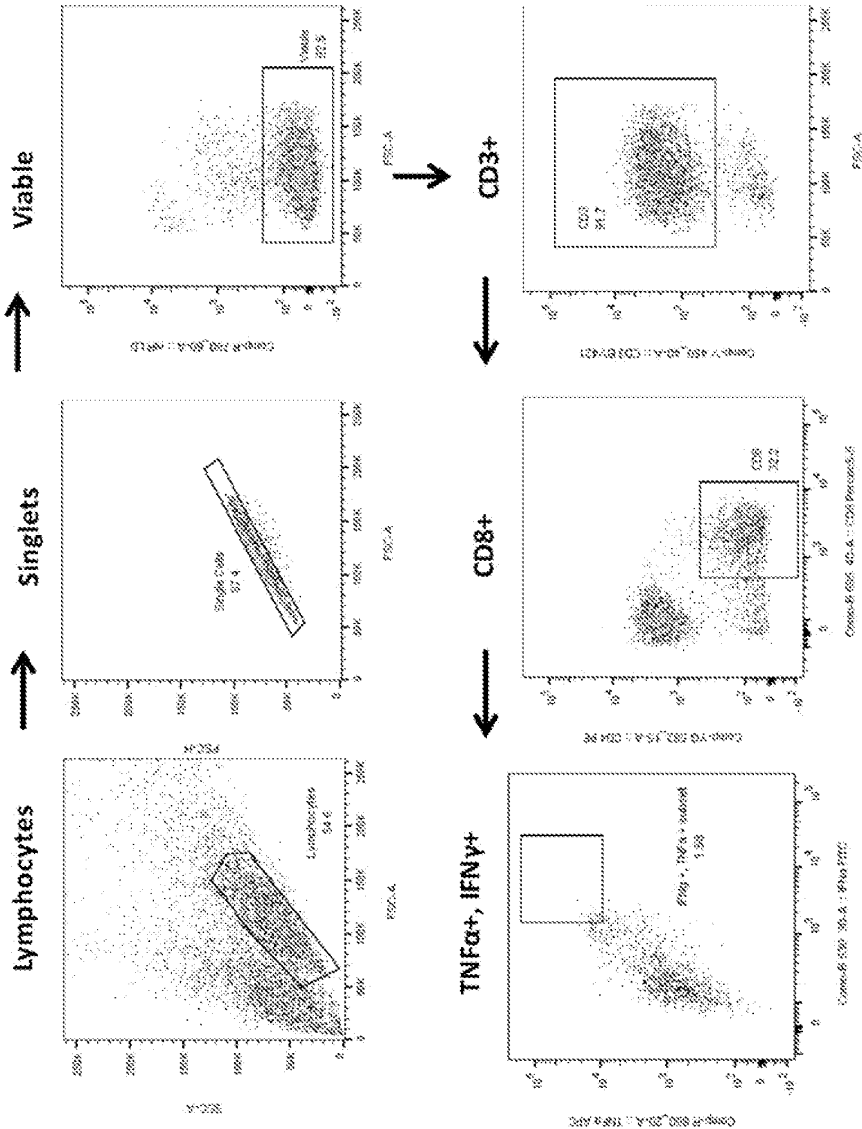


Figure 2

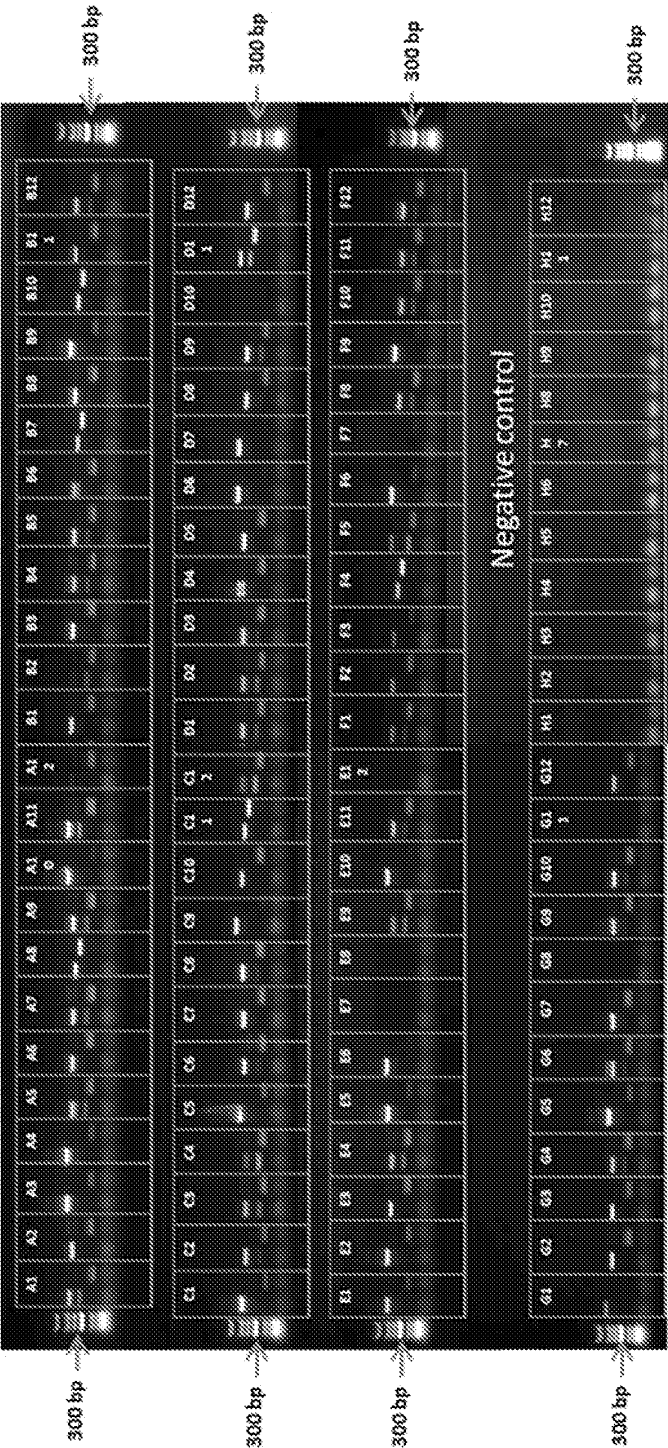


Figure 3

E2-TLQ-TCR amino acid sequence	
<u>TCR β chain</u>	<u>1 ... 314</u>
<u>TCR β signal peptide sequence</u>	<u>1 ... 19</u>
<u>TCR β antigen-specific sites</u>	<u>111 ... 126</u>
<u>TCR α chain</u>	<u>347 ... 366</u>
<u>TCR α signal peptide sequence</u>	<u>347 ... 600</u>
<u>TCR α antigen-specific sites</u>	<u>458 ... 471</u>
<u>FURIN cleavage site</u>	<u>315 ... 318</u>
<u>SGSG LINKER (SEQ ID NO: 233)</u>	<u>319 ... 322</u>
<u>F2A LINKER</u>	<u>323 ... 346</u>
<u>Murinized amino acids</u>	<u>53, 57, 68, 71, 74, 572 ... 575</u>
<u>cysteine bridge changes</u>	<u>192, 529</u>

1 MDTWLVCWAIFSLIKAGLTEPEVTOTPSHOVTOMGOEVILRCVPISNHLYFYWYROIILGO
 61 KVEFLVSFYNNIEISEKSEIFDDQFSVERPDGSNFTLKIRSTKLEDSAMYFCASRASVGVG
 121 TGELFFGEGSRLTVLEDLKNVFPPEVAVFEPSKAEIAHTQKATLVCLATGFFPDHVELSW
 181 WVNGKEVHSGVCTDPOPLKEQPALNDSRYCLSSRLRVSATFWQNPРНHFRQVQFYGLSE
 241 NDEWTQDRAKPVTOIVSAEAWGRADCGITSASYHOGVLSATILYEILLGKATLYAVLVSA
 301 LVLAMVVRKDSRGRAKRSGSGAPVKQTLNFDLLKLAGDVESNPGPMTRVSLIWA VVVST
 361 CLESGMAOTVTOSQPEMSVOEAEVTLTCTYDTSESNYLFWYKOPPSROMILVIRQ EAY
 421 KQONATENRFSVNFQKAAKSFSLKISDSQLGDTAMYFCAFTYGGSQGNLIFGKGTKLSVK
 481 PNIQNPDPVYQLRDSKSSDKSVCLFTDFDSQTNVSQSKDSDVYITDKC VLDMRSMDFKS
 541 NSAVAWSNKSDFACANAFNNSIIPEDTFFPSSDVPCDVKLVKESFETDTNLNFQNL SVIG
 601 FRILLKLVAGFNLLMTLRLWSS (SEQ ID NO. 209)

Figure 4

E5-NLD-TCR amino acid sequences	
<u>TCR β chain</u>	<u>1 ... 312</u>
<u>TCR β signal peptide sequence</u>	<u>1 ... 21</u>
<u>TCR β antigen-specific sites</u>	<u>111 ... 126</u>
<u>TCR α chain</u>	<u>347 ... 599</u>
<u>TCR α signal peptide sequence</u>	<u>347 ... 364</u>
<u>TCR α antigen-specific sites</u>	<u>456 ... 470</u>
<u>FURIN cleavage site</u>	<u>313 ... 317</u>
<u>SGSG LINKER (SEQ ID NO: 233)</u>	<u>318 ... 322</u>
<u>F2A LINKER</u>	<u>323 ... 346</u>
<u>Murinized amino acids</u>	<u>153, 157, 268, 271, 274</u>
<u>cysteine bridge changes</u>	<u>192, 528</u>

1 MGTSLLCWVVLGFLGTDHTGAGVSQSPRYKVTKRGQDVALRCDPISGHVSLYWYRQALGO
 61 GPEFLTYFNIEAQODKSGLPNDRFSAERPEGSISTLTIORTEQRDSAMYRCASSPELAGP
 121 OETQYFGPGTRLLVLEDLNKVFPEVAVFEPSKAEIAHTQKATLVCLATGFFPDHVELSW
 181 WVNGKEVHSGVCTDPQPLKEQPALNDSRYCLSSRLRVSATFWQNP RNHFR CQVQFYGLSE
 241 NDEWTQDRAKPVTQIVSAEAWGRADCGITSASYHQGVLSATILYEILLGKATLYAVLVSA
 301 LVLAMVVKRKDFRAKRS GSGAPVKQTLNFDLLKLAGDVESNPGPMLTASILLRAVIASICV
 361 VSSMAOKVTQAQTEISVVEKEDVTLDVCYETRDTTYLFWYKOPPSGELVFLIRNSFDE
 421 QNEISGRYSWNFOKSTSSFNFTITASQVVD SAVYFCALSEGGGSQGNLIFGKGTKLSVKP
 481 NIQNPDP AVYQLRDSKSSDKSVCLFTDFDSQTNVSQSKSDVYITDKCVLDMRSMDFKSN
 541 SAVAWSNKSDFACANAFNNSIIPEDTFFPS SDVPCDVKLVEKSFETDTNLNFQNL SVIGF
 601 RILLKLVAGFNLLMTLRLWSS (SEQ ID NO.210)

Figure 5

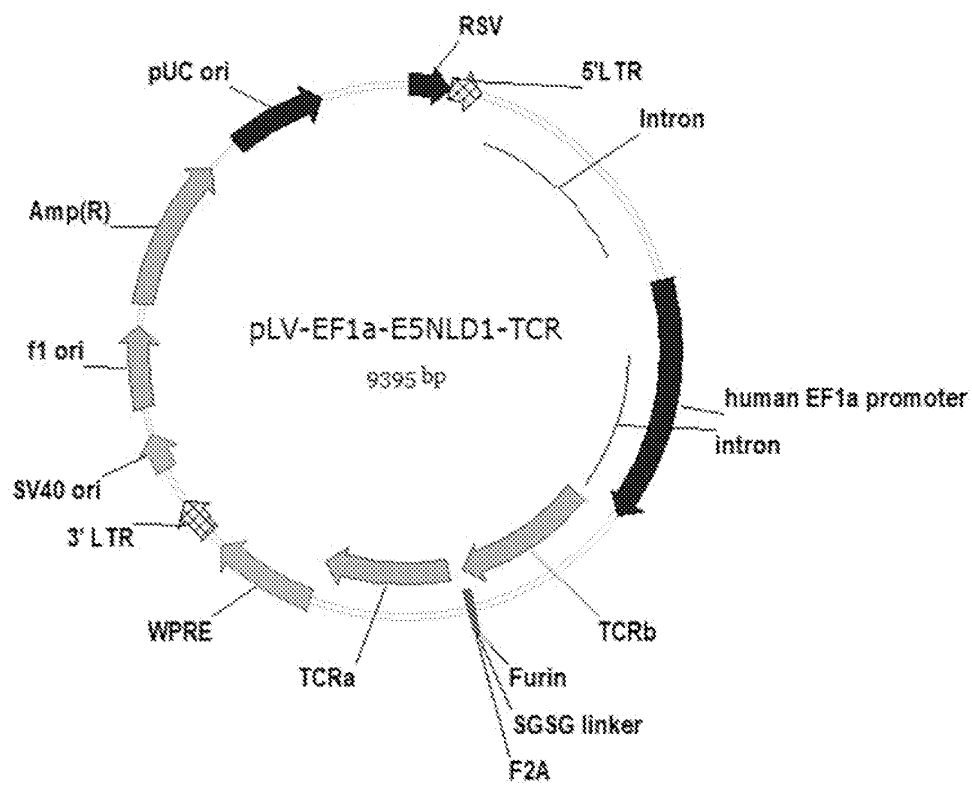


Figure 6

E6-AFR-TCR amino acid sequences	
<u>TCR β chain</u>	<u>1 ... 311</u>
<u>TCR β signal peptide sequence</u>	<u>1 ... 21</u>
<u>TCR β antigen-specific sites</u>	<u>110 ... 125</u>
<u>TCR α chain</u>	<u>344 ... 596</u>
<u>TCR α signal peptide sequence</u>	<u>344 ... 364</u>
<u>TCR α antigen-specific sites</u>	<u>455 ... 466</u>
<u>FURIN cleavage site</u>	<u>312 ... 315</u>
<u>SGSG LINKER (SEQ ID NO: 233)</u>	<u>316 ... 319</u>
<u>F2A LINKER</u>	<u>320 ... 343</u>
<u>Murinized amino acids</u>	<u>52, 56, 267, 270, 273, 568 ... 571</u>
<u>cysteine bridge changes</u>	<u>191, 525</u>

1 MTIFLLCYMGFYFLGAGLMEADYQTPRYLVIGTGKKITLECSQTMGHDKMYWYQODPGM
 61 ELHLIHYSYGVNSTEKGDLSSSESTVSRIRTEHFPLTLESARPSHTSQYLCASSGPGQGHN
 121 OPQHFGDGTRLSILEDLNKVFPEVAVFEPSKAEIAHTQKATLVCLATGFFPDHVELSWW
 181 VNGKEVHSGVCTDPQPLKEQPALNDSRYCLSSRLRVSATFWQNP RNHFRCQVQFYGLSEN
 241 DEWTQDRAKPVTQIVSAEAWGRADCGITSA SYHOGVLSATILYEILLGKATLYAVLVSAL
 301 VLMAMVKRKDFRAKRSGSGAPVKQTLNFDLLKLAGDVESNPGPMLTASLLRAVIASICVV
 361 SSMAOKVTOAOTEISVVEKEDVTLDVCYETRDTTYLFWYKOPPSGELVFLIRRNSFDEQ
 421 NEISGRYSWNFQKSTSSFNFTITASQVVDSAVYFCALGSSGTYKYIFGTGTRLKVLANIQ
 481 NPDPAVYQLRDSKSSDKSVCLFTDFDSQTNVSQSKDSDVYITDKCVLDMRSMDFKSNSAV
 541 AWSNKSDFACANAFNNSIIPEDTFFPS SDVPCDVKLVEKSFETDTNLFQNL SVIGFRIL
 601 LLKVAGFNLLMTLRLWSS (SEQ ID NO.211)

Figure 7

E6-TIH-TCR amino acid sequences	
<u>TCR β chain</u>	<u>1 ... 310</u>
<u>TCR β signal peptide sequence</u>	<u>1 ... 21</u>
<u>TCR β antigen-specific sites</u>	<u>110 ... 124</u>
<u>TCR α chain</u>	<u>343 ... 589</u>
<u>TCR α signal peptide sequence</u>	<u>343 ... 360</u>
<u>TCR α antigen-specific sites</u>	<u>447 ... 460</u>
<u>FURIN cleavage site</u>	<u>311 ... 314</u>
<u>SGSG LINKER (SEQ ID NO: 233)</u>	<u>315 ... 318</u>
<u>F2A LINKER</u>	<u>319 ... 342</u>
<u>Murinized amino acids</u>	<u>151, 155, 266, 269, 272, 561 ... 564</u>
<u>cysteine bridge changes</u>	<u>190, 518</u>

1 MGPOLLGYVVLCLLGAGPLEAQVTQNPRLITVTGKKLTVTCSQNMNHEYMSWYRQDPGL
 61 GLRQIYYSMNVEVTDKGDVPEGYKVS RKEKRNFPLILESPSPNQTSLYFCASSPQGRINS
 121 PLHFGNGTRLTVTEDLNKVFPEVAVFEPSKAEIAHTQKATLVCLATGFFPDHVELSWWV
 181 NGKEVHSGVCTDPQPLKEQPALNDSRYCLSSRLRVSATFWQNP RNHFR CQVQFYGLSEND
 241 EWTDRAKPVTQIVSAEAWGRADCGITSASYHOGVLSATILYEILLGKATLYAVLVSALV
 301 LMAMVKRKDFRAKRS GSGAPVKQTLNFDLLKLAGDVESNPGPMWGVFLLYVSMKMGTTG
 361 QNIDQPTMTATEGAIVQINCTYQTS GFNGLFWYQQHAGEAPTFLSYNVLDGLEEKGRFS
 421 SFLSRSKGYSYLLKELQMKDSASYLCAVRDTGYGQNFVFGPGTRLSVLPYIQNPDPVY
 481 QLRDSKSSDKSVCLFTDFDSQTNVSQSKSDVYITDKCVLDMRSMDFKSNSAVAWSNKSD
 541 FACANAFNNSIIPEDTFFPS SDVPCDVKLVEKSFETDTNLNFQNL SVIGFRILLKLVAGF
 601 NLLMTLRLWSS (SEQ ID NO.212)

Figure 8

E6-HDI-TCR amino acid sequences	
<u>TCR β chain</u>	<u>1 ... 317</u>
<u>TCR β signal peptide sequence</u>	<u>1 ... 21</u>
<u>TCR β antigen-specific sites</u>	<u>119 ... 129</u>
<u>TCR α chain</u>	<u>350 ... 596</u>
<u>TCR α signal peptide sequence</u>	<u>350 ... 368</u>
<u>TCR α antigen-specific sites</u>	<u>454 ... 467</u>
<u>FURIN cleavage site</u>	<u>318 ... 321</u>
<u>SGSG LINKER (SEQ ID NO: 233)</u>	<u>322 ... 325</u>
<u>F2A LINKER</u>	<u>326 ... 349</u>
<u>Murinized amino acids</u>	<u>155, 159, 271, 274, 277, 568 ... 571</u>
<u>cysteine bridge changes</u>	<u>195, 525</u>

1 MLLLLLLLGPGISLLLPGLAGSGLGAVVSQHPSWVICKSGTSVKIECRSLDFQATTMEW
 61 YRQFPKQSLMLMATSNEGSKATYEQGVKDKFLINHASLTLSTLTVTSAHPEDSSFYICS
 121 AREGYRSYFGPGTRLTVLEDLKNVFPPEVAVFEPKAEIAHTQKATLVCLATGFFPDHVE
 181 LSWWVNGKEVHSGVCTDPQLKEQPALNDSRYCLSSRLRVSAFTWONPRNHFRCoVQFYG
 241 LSENDEWTQDRAKPVTOIVSAEAWGRADCGITSAHYHOGVLSATILYEILLGKATLYAVL
 301 VSALVLMAMVKRKDSRGRAKRSGSGAPVKQTLNFDLLKLAGDVESNPGPMRLVAFVTVFL
 361 TGFTIIDAKTTOPPSMDCAEGRAANLPCNHSTISGNEYVYWYROIHSQGPOYIIHGLKNN
 421 ETNEMASLIITEDRKSSTLILPHATLRDTAVYYCIVRDRSYGONFVFGPGTRLVLPYIQ
 481 NPDPVAVYQLRDSKSSDKSVCLFTDFDSQTNVSQSKDSVYITDKCVLDMRSMDFKNSAV
 541 AWSNKSDFACANAFNNSIIPEDTFFPSSDVPCDVKLVEKSFETDTNLNFONLSVIGFRIL
 601 LLKVAGFNLLMTLRLWSS (SEQ ID NO.213)

Figure 9

E6-KQR-TCR amino acid sequences	
<u>TCR β chain</u>	<u>1 ... 318</u>
<u>TCR β signal peptide sequence</u>	<u>1 ... 21</u>
<u>TCR β antigen-specific sites</u>	<u>119 ... 130</u>
<u>TCR α chain</u>	<u>351 ... 608</u>
<u>TCR α signal peptide sequence</u>	<u>351 ... 371</u>
<u>TCR α antigen-specific sites</u>	<u>460 ... 474</u>
<u>FURIN cleavage site</u>	<u>319 ... 322</u>
<u>SGSG LINKER (SEQ ID NO: 233)</u>	<u>323 ... 326</u>
<u>F2A LINKER</u>	<u>327 ... 350</u>
<u>Murinized amino acids</u>	<u>137, 141, 272, 275, 278, 580 ... 583</u>
<u>cysteine bridge changes</u>	<u>196, 537</u>

1 MLLLLLLLGPGISLLLLPGSLAGSGLGAVVSQHPSWVICKSGTSVKIECRSLDFQATTMEW
 61 YRQFPKQSLMLMATSNEGCKATYEQGVEKDKFLINHASLTSLTLTVTSAHPEDSSFYICS
 121 TAGETDYOYFGPGTRLTVLEDLKNVFPPEVAVFEPKAEIAHTQKATLVCLATGFFPDHV
 181 ELSWWVNGKEVHSGVCTDPQPLKEQPALNDSRYCLSSRLRVSATFWQNPРНHFRСQVQFY
 241 GLSENDEWTQDRAKPVTOIVSAEAWGRADCGITSASYHQGVLSATILYEILLGKATLYAV
 301 LVSAVLMLAMVVRKDSRGRAKRSKGSGAPVKQTLNFDLLKLAGDVESNPGPMAGIFALFMY
 361 LWLQLDWVSRGESVGLHLPTLSVQEGDNSIINCAYSNSASDYFIWYKQESGKGPOFIIDI
 421 RSNMDKROGQORVTVLLNKTVKHLSLQIAATQPGDSAVYFCAETLGLDGGKLIFGQGTET
 481 SVKPNIQNPDSVKPNPAVYQLRDSKSSDKSVCLFTDFDSQTNVSQSKDSDVYITDKCVLD
 541 MRSMDFKSNSAVAWSNKSDFACANAFNNSIIPEDTFFPSSDVPCDVKLVEKSFETDTNLN
 601 FQNLVIGFRILLKLVAGFNLLMTLRLWSS (SEQ ID NO.214)

Figure 10

E7-TPT-TCR amino acid sequences	
<u>TCR β chain</u>	<u>1 ... 311</u>
<u>TCR β signal peptide sequence</u>	<u>1 ... 19</u>
<u>TCR α chain</u>	<u>344 ... 614</u>
<u>TCR α signal peptide sequence</u>	<u>344 ... 360</u>
<u>FURIN cleavage site</u>	<u>312 ... 315</u>
<u>SGSG LINKER (SEQ ID NO: 233)</u>	<u>316 ... 319</u>
<u>F2A LINKER</u>	<u>320 ... 343</u>
<u>Murinized amino acids</u>	<u>152, 156, 267, 270, 273, 564 ... 567</u>
<u>cysteine bridge changes</u>	<u>191, 521</u>

1 MGCRLIGCVVECLLQAGPIDTAVSOTPKYLVTO MGNDKSIKCEQNLGHDTMYWYKODSKK
 61 FLKIMFSYNNKELIINETVPNRFSPKSPDKAHLNLHINSLELGDSAVYFCASSOGTGRGN
 121 TEAFFGQGTRLTVVEDLNKVFPEVAVFEPSKAEIAHTQKATLVCLATGFYPDHVELSWW
 181 VNGKEVHSGVCTDPQPLKEQPALNDSRYCLSSRLRVSATFWQNPRNHFRQCQVFYGLSEN
 241 DEWTQDRAKPVTQIVSAEAWGRADCGITSASYHQGVLSATILYEILLGKATLYAVLVSA
 301 VLMAVVRKRDFRAKRSGSGAPVKQTLNFDLLKLAGDVESNPGPMFOVARVIVFETLSTLS
 361 LAKTTQPISMDSEGOEVNITCSHNNIATNDYITWYQOFPSOGPRFIIQGYKTKVTNEVA
 421 SLFIPADRKSSTLSLPRVSLSDTAVYYCLVGPYFGGGSYQLTFGKGTKLSPVNIQNPDP
 481 AVYQLRDSKSSDKSVCLFTDFDSQTNVSQSKDSDVYITDKCVLDMRSMDFKSNSAVAWSN
 541 KSDFACANAFNNSIIPEDTFFPSSDVP CDVKLVEKSFETDTNLFONLSVIGFRILLKV
 601 AGFNLLMTLRLWSS (SEQ ID NO.215)

Figure 11

E5-SAF-TCR amino acid sequences	
<u>TCR β chain</u>	<u>1 ... 318</u>
<u>TCR β signal peptide sequence</u>	<u>1 ... 19</u>
<u>TCR α chain</u>	<u>351 ... 629</u>
<u>TCR α signal peptide sequence</u>	<u>351 ... 370</u>
<u>FURIN cleavage site</u>	<u>319 ... 322</u>
<u>SGSG LINKER (SEQ ID NO: 233)</u>	<u>323 ... 326</u>
<u>F2A LINKER</u>	<u>327 ... 350</u>
<u>Murinized amino acids</u>	<u>157, 161, 272, 275, 278, 579 ... 582</u>
<u>cysteine bridge changes</u>	<u>196, 536</u>

1 MGTRLLFWVAFCLLGADHTGAGVSQSPSNKVTEKGDVELRCDPISGHTALYWYRQSLGO
 61 GLEFLIYFQNSAPDKSGLPSDRFSAERTGGSVSTLTIQRTQQEDSAVYLCASSLGQGA
 121 GTDTQYFGPGTRLTVLEDKTLKNVFPPEVAVFEPSKAEIAHTQKATLVCLATGFYPDHV
 181 ELSWVNGKEVHSGVCTDPOPLKEQPALNDSRYCLSSRLRVSATFWONPRNHFRCOVQFY
 241 GLSENDEWTQDRAKPVTQIVSAEAWGRADCGITSA SYHQGVLSATILYEILLGKATLYAV
 301 LVSALVLMAMVKRKDSRGRKRS GSGAPVKQTLNFDLLKLAGDVESNPGPMTEVSLWAV
 361 VVSTCLESGMAOTVTQSQPEMSVQEAETVTL SCTYDTSENNYYLFWYKOPPSROMILVIR
 421 QEAYKQONATENRFSVNFQKAAKSFSLKISDSQLGDTAMYFCAFMKPDGSGNTGKLIFGO
 481 GTTLOVKPNIQNPDAVYQLRDSKSSDKSVCLFTDFDSQTNVSQSKSDVYITDKCVLDM
 541 RSMDFKSN SAVAWSNKSDFACANAFNNSIIPEDTFFPS SDVPCDVKLVEKSFETDTNLNF
 601 QNL SVIGFRILLKLVAGFNLLMTLRWSS (SEQ ID NO.216)

Figure 12

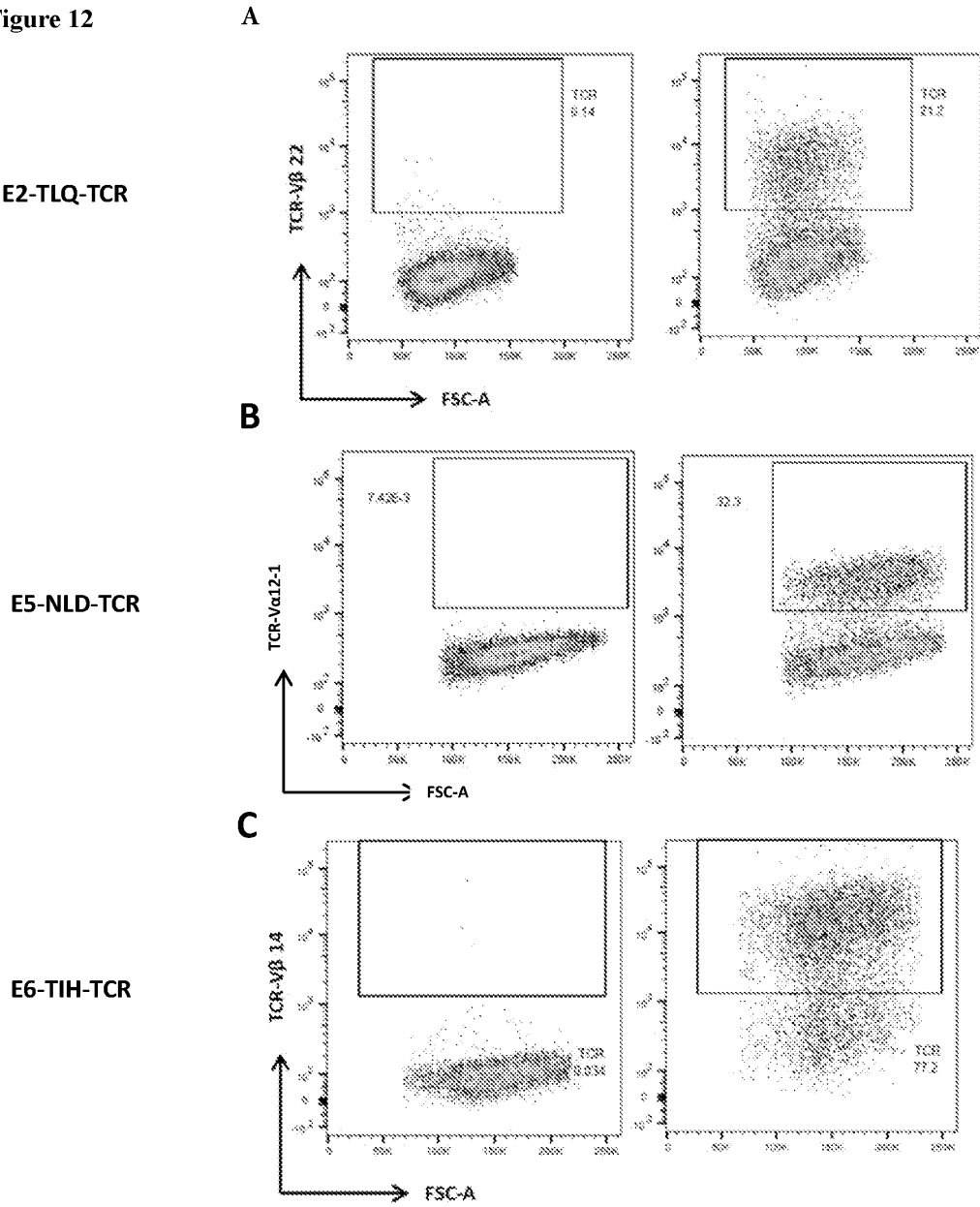


Figure 13

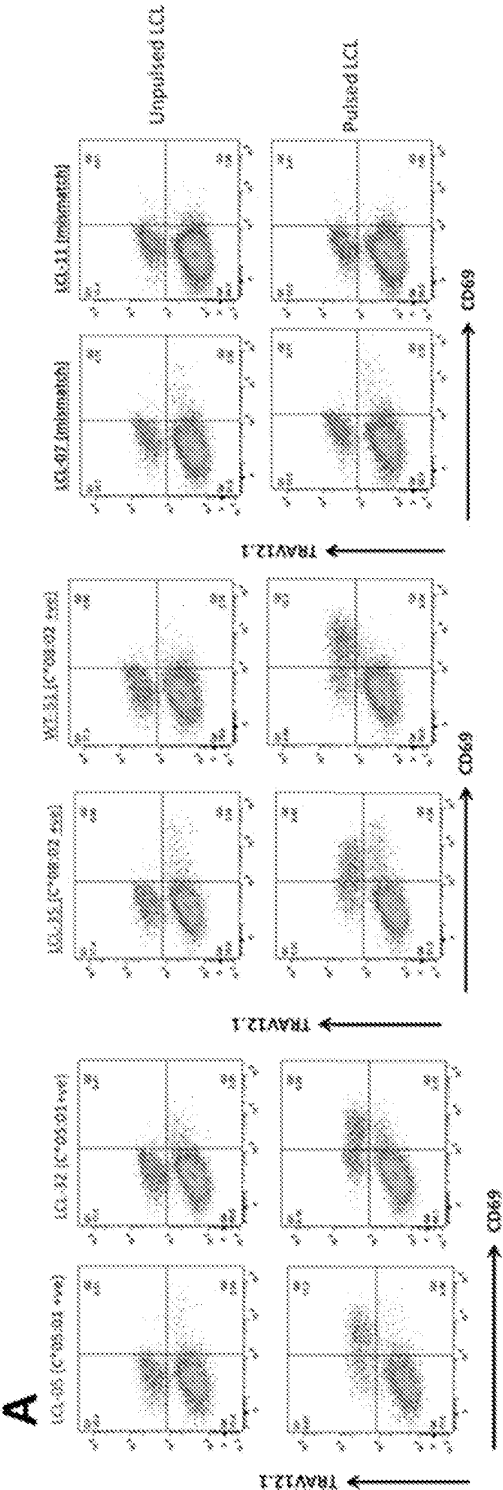


Figure 13 cont.

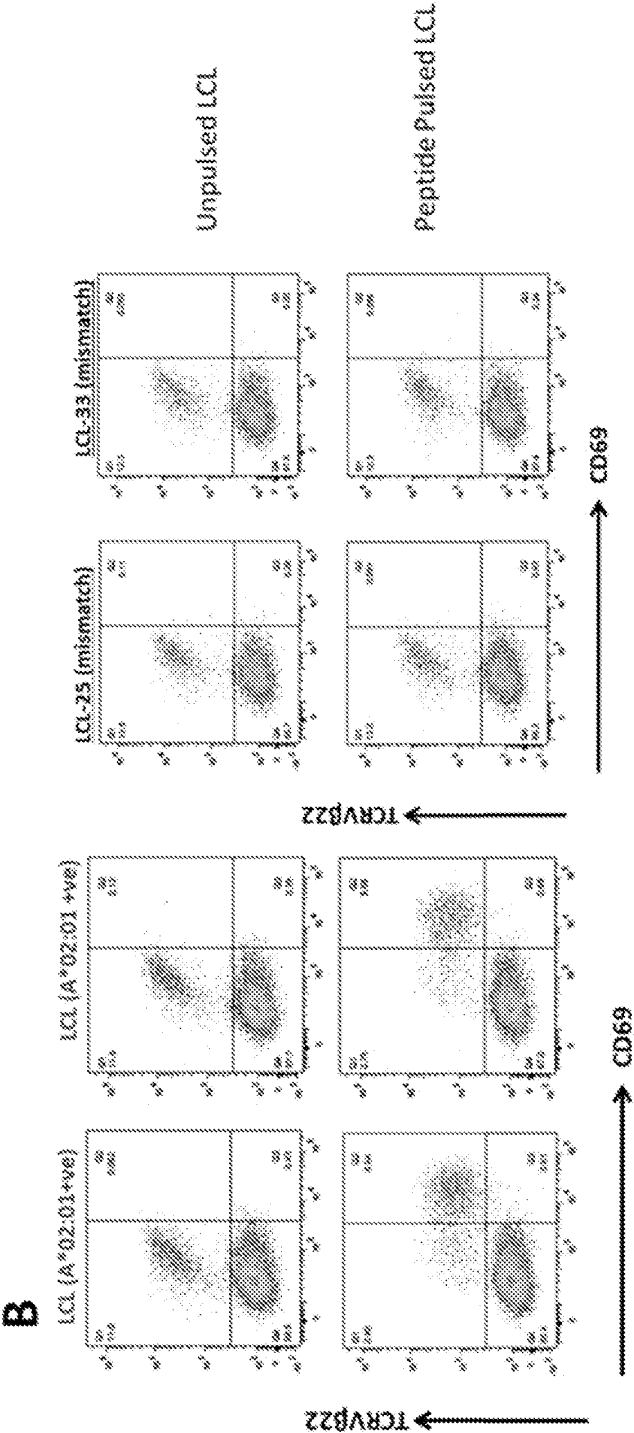
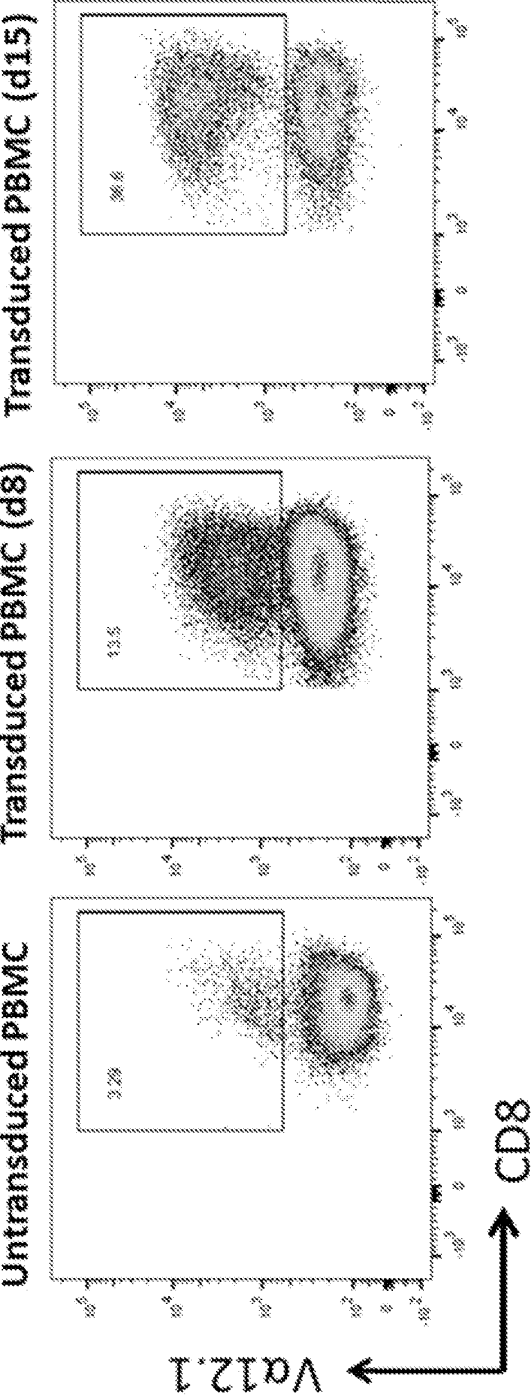


Figure 14



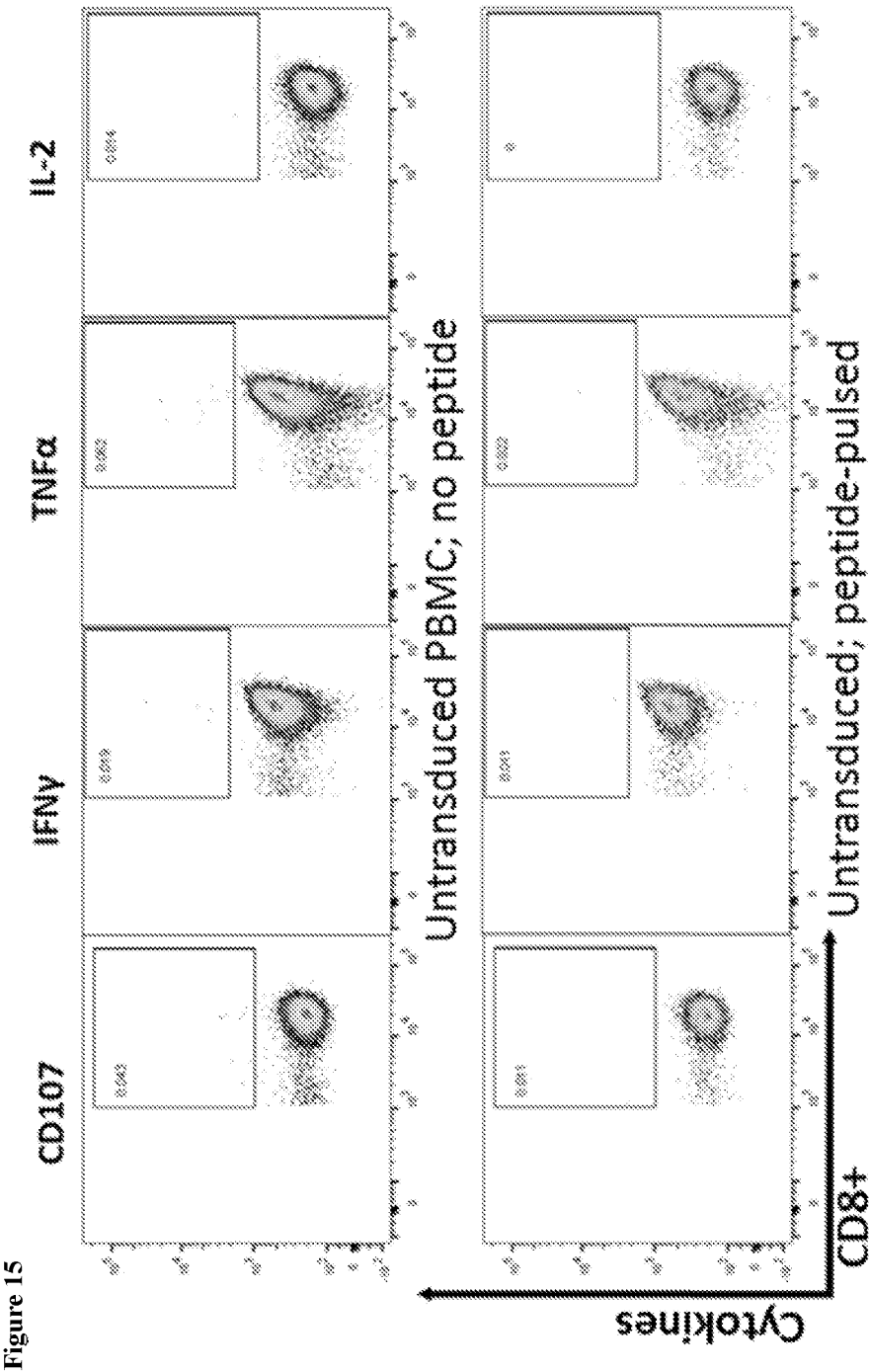
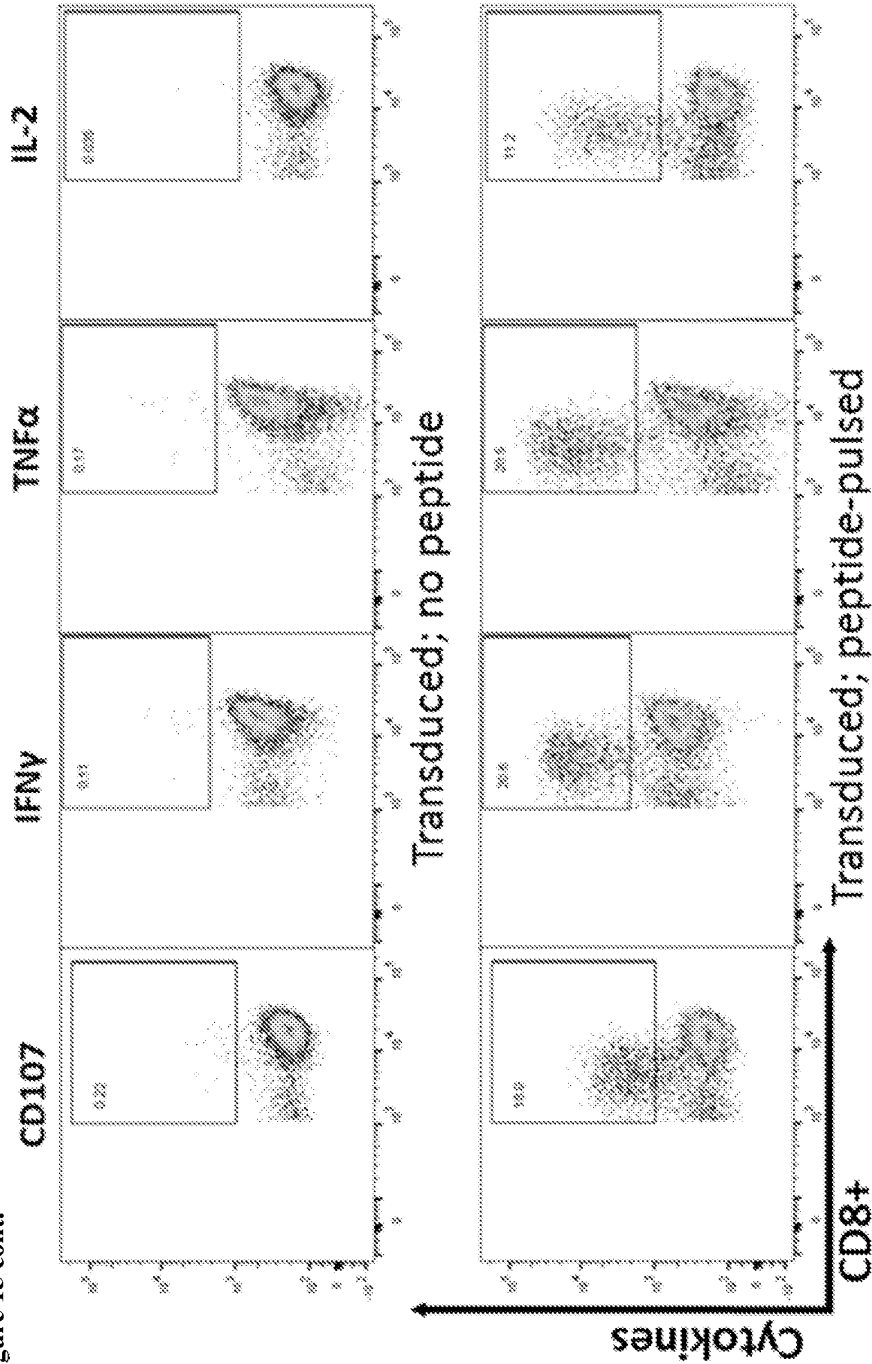


Figure 15 cont.



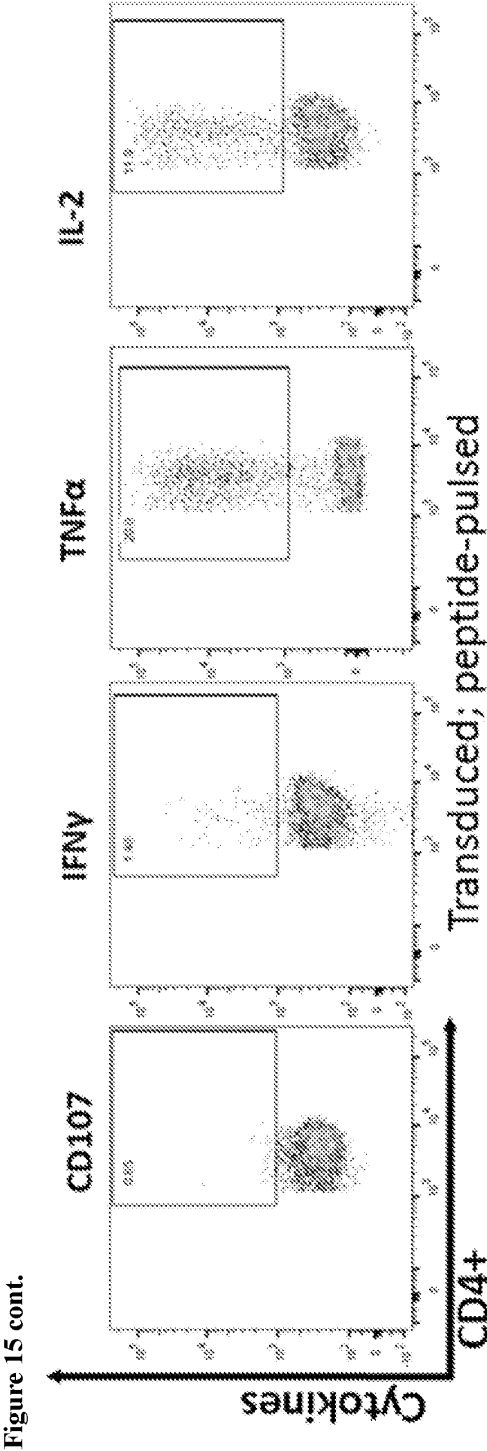


Figure 16

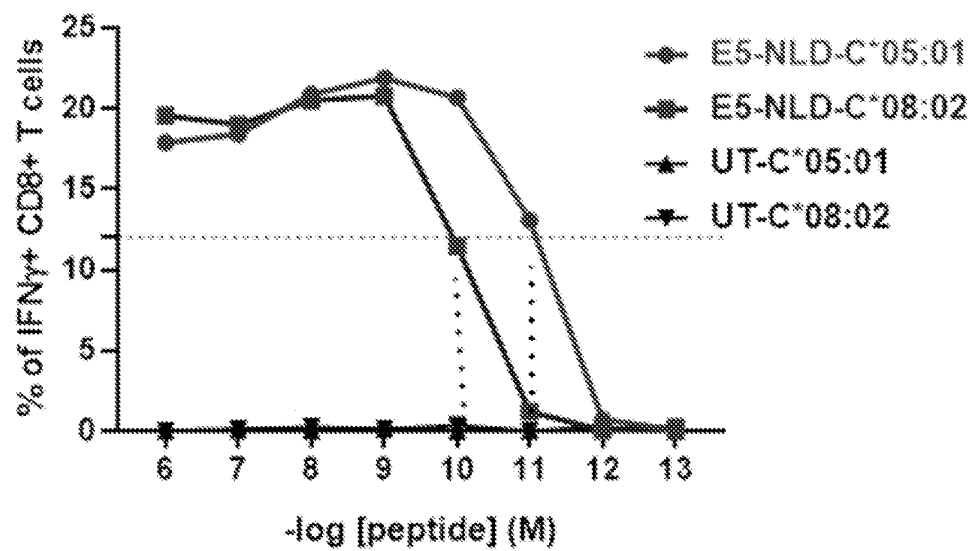


Figure 17

A

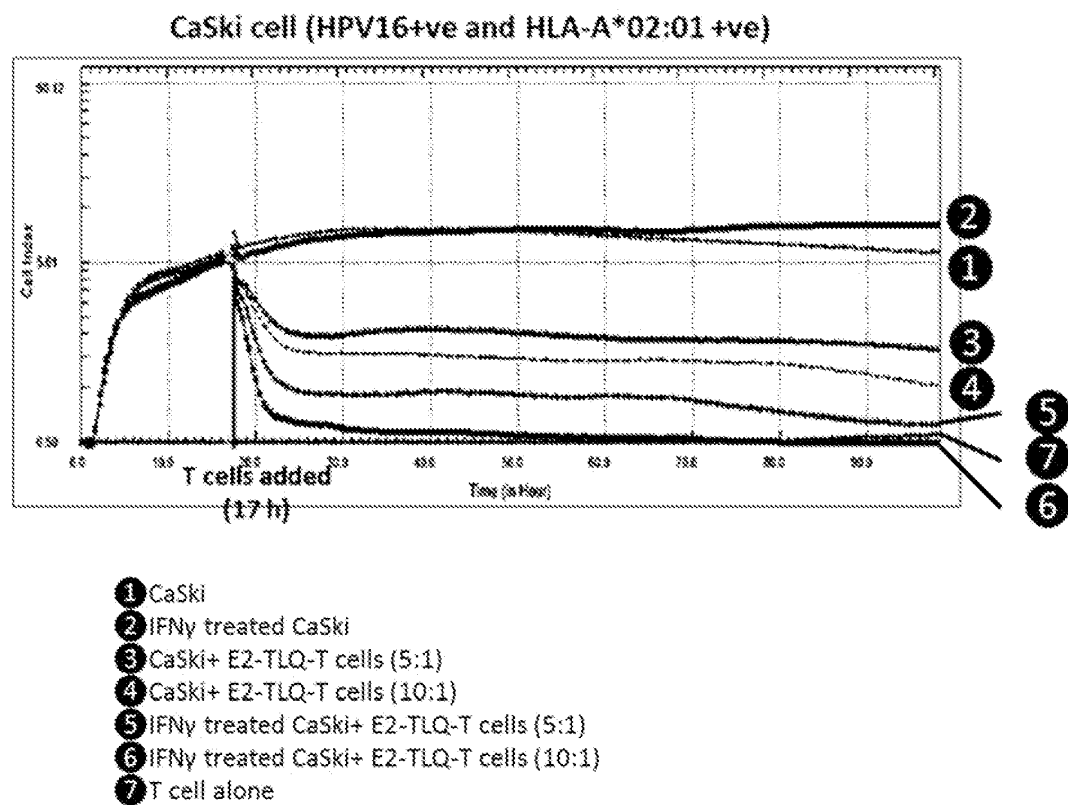
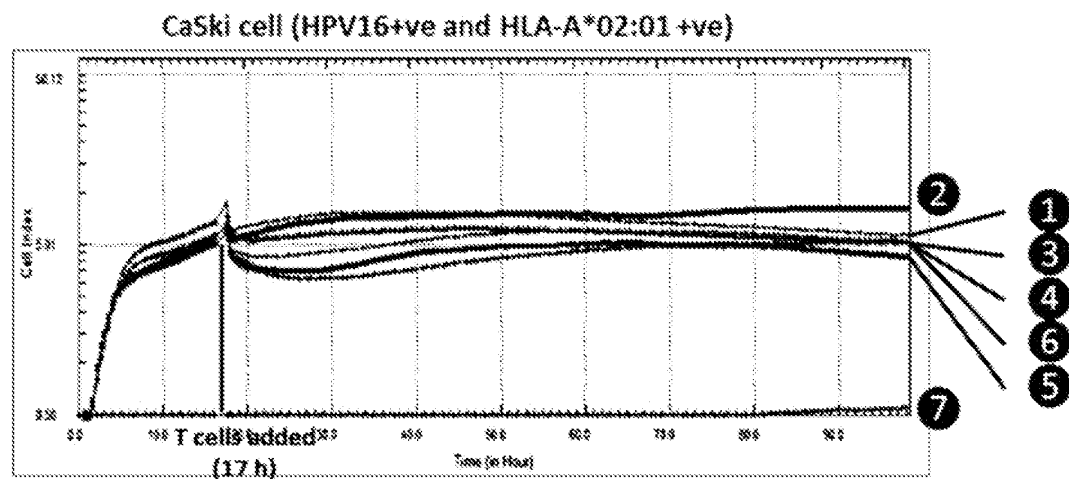


Figure 17 cont.

B



- ① Caski
- ② IFN γ treated CaSki
- ③ CaSki+ UT-T cells (5:1)
- ④ CaSki+ UT-T cells (10:1)
- ⑤ IFN γ treated CaSki+ UT-T cells (5:1)
- ⑥ IFN γ treated CaSki+ UT-T cells (10:1)
- ⑦ T cell alone

Figure 17 cont.

C

