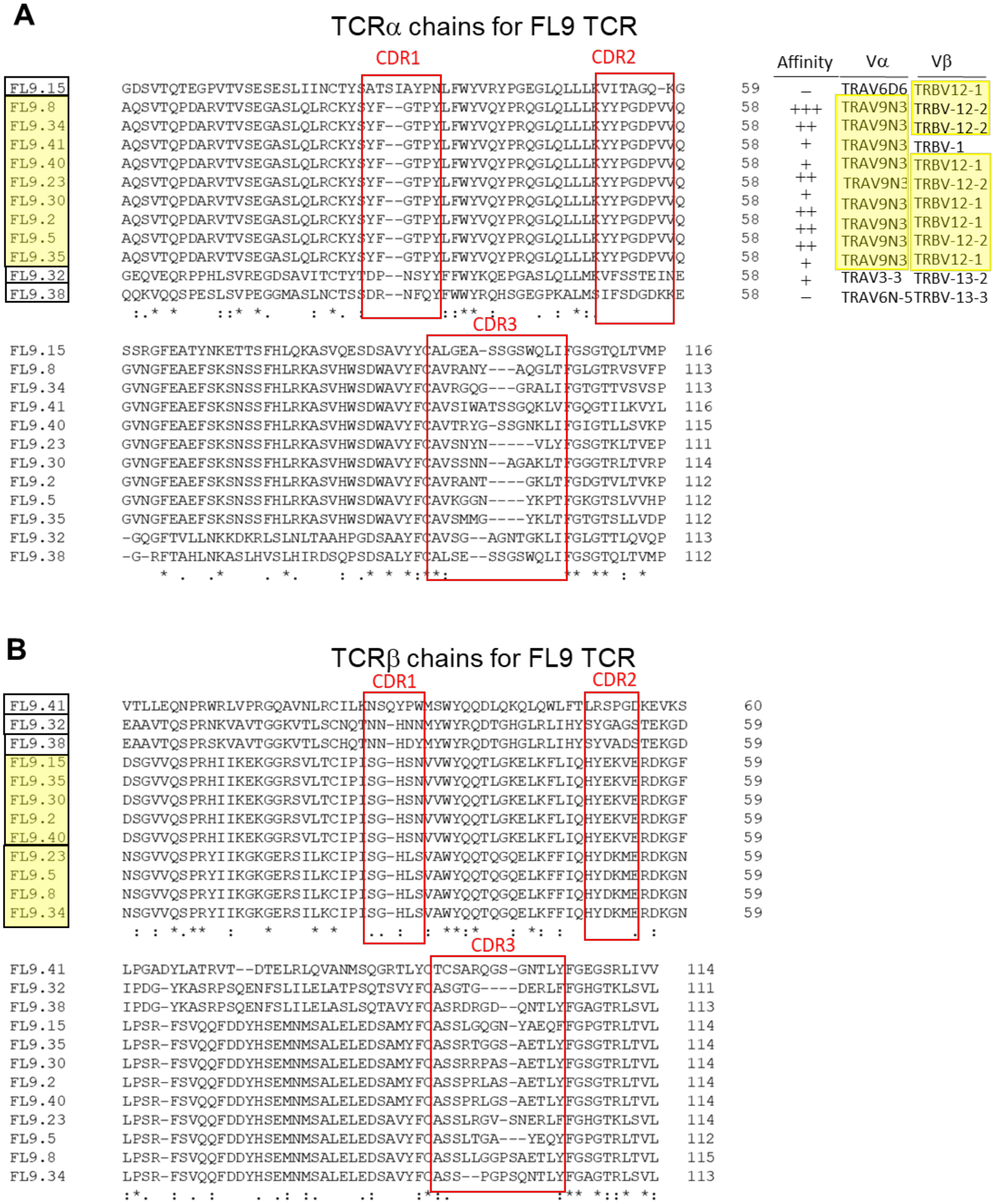
Supplemental Figure 1. TCR repertoire of Qa-1–FL9 Tet^{+} CD8 T cells.

Single Qa-1–FL9-PE^{+} Qa-1–FL9-APC^{+} cells were sorted and subjected to sequencing for TCRα and TCRβ. TCRα and TCRβ pairs were then analyzed based on their TCR V gene segments. Alignment of TCRα (**A**) and TCRβ (**B**) sequences obtained from Qa-1–FL9 Tet^{+} single cells. TCR affinity to Qa-1–FL9 complex and TCR Vα and Vβ gene usage by each Qa-1–FL9 Tet^{+} CD8 T cell are shown on the right. TRAV9N3 (Vα3.2) and/or TRBV12.1/2 (Vβ5.1/2) expressing CD8 T cell clones are highlighted.



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                                                                                 Affinity  Vα          Vβ
FL9.15      GDSVTQTEGPVTVSESESLIINCTYSATSIAYPNLFWYVRYPGEGLQLLLKVITAGQ-KG     59     –      TRAV6D6     TRBV12-1
FL9.8       AQSVTQPDARVTVSEGASLQLRCKYSYF--GTPYLFWYVQYPRQGLQLLLKYYPGDPVVQ     58     +++    TRAV9N3     TRBV-12-2
FL9.34      AQSVTQPDARVTVSEGASLQLRCKYSYF--GTPYLFWYVQYPRQGLQLLLKYYPGDPVVQ     58     ++     TRAV9N3     TRBV-12-2
FL9.41      AQSVTQPDARVTVSEGASLQLRCKYSYF--GTPYLFWYVQYPRQGLQLLLKYYPGDPVVQ     58     +      TRAV9N3     TRBV-1
FL9.40      AQSVTQPDARVTVSEGASLQLRCKYSYF--GTPYLFWYVQYPRQGLQLLLKYYPGDPVVQ     58     +      TRAV9N3     TRBV12-1
FL9.23      AQSVTQPDARVTVSEGASLQLRCKYSYF--GTPYLFWYVQYPRQGLQLLLKYYPGDPVVQ     58     ++     TRAV9N3     TRBV-12-2
FL9.30      AQSVTQPDARVTVSEGASLQLRCKYSYF--GTPYLFWYVQYPRQGLQLLLKYYPGDPVVQ     58     +      TRAV9N3     TRBV12-1
FL9.2       AQSVTQPDARVTVSEGASLQLRCKYSYF--GTPYLFWYVQYPRQGLQLLLKYYPGDPVVQ     58     ++     TRAV9N3     TRBV12-1
FL9.5       AQSVTQPDARVTVSEGASLQLRCKYSYF--GTPYLFWYVQYPRQGLQLLLKYYPGDPVVQ     58     ++     TRAV9N3     TRBV-12-2
FL9.35      AQSVTQPDARVTVSEGASLQLRCKYSYF--GTPYLFWYVQYPRQGLQLLLKYYPGDPVVQ     58     ++     TRAV9N3     TRBV12-1
FL9.32      GEQVEQRPPHLSVREGDSAVITCTYTDP--NSYYFFWYKQEPGASLQLLMKVFSSTEINE     58     +      TRAV3-3     TRBV-13-2
FL9.38      QQKVQQSPESLSVPEGGMASLNCTSSDR--NFQYFWWYRQHSGEGPKALMSIFSDGDKKE     58     –      TRAV6N-5    TRBV-13-3
             :.* *    ::* *.    : *. :        ::** :    . : *:.

FL9.15      SSRGFEATYNKETTSFHLQKASVQESDSAVYYCALGEA-SSGSWQLIFGSGTQLTVMP  116
FL9.8       GVNGFEAEFSKSNSSFHLRKASVHWSDWAVYFCAVRANY---AQGLTFGLGTRVSVFP  113
FL9.34      GVNGFEAEFSKSNSSFHLRKASVHWSDWAVYFCAVRGQG---GRALIFGTGTTVSVSP  113
FL9.41      GVNGFEAEFSKSNSSFHLRKASVHWSDWAVYFCAVSIWATSSGQKLVFGQGTILKVYL  116
FL9.40      GVNGFEAEFSKSNSSFHLRKASVHWSDWAVYFCAVTRYG-SSGNKLIFGIGTLLSVKP  115
FL9.23      GVNGFEAEFSKSNSSFHLRKASVHWSDWAVYFCAVSNYN-----VLYFGSGTKLTVEP  111
FL9.30      GVNGFEAEFSKSNSSFHLRKASVHWSDWAVYFCAVSSNN--AGAKLTFGGGTRLTVRP  114
FL9.2       GVNGFEAEFSKSNSSFHLRKASVHWSDWAVYFCAVRANT----GKLTFGDGTVLTVKP  112
FL9.5       GVNGFEAEFSKSNSSFHLRKASVHWSDWAVYFCAVKGGN----YKPTFGKGTSLVVHP  112
FL9.35      GVNGFEAEFSKSNSSFHLRKASVHWSDWAVYFCAVSMMG----YKLTFGTGTSLLVDP  112
FL9.32      -GQGFTVLLNKKDKRLSLNLTAAHPGDSAAYFCAVSG--AGNTGKLIFGLGTTLQVQP  113
FL9.38      -G-RFTAHLNKASLHVSLHIRDSQPSDSALYFCALSE--SSGSWQLIFGSGTQLTVMP  112
                * .  .*    . *.    : .* * *:**:            ** ** : *
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FL9.41      VTLLEQNPRWRLVPRGQAVNLRCILKNSQYPWMSWYQQDLQKQLQWLFTLRSPGDKEVKS     60
FL9.32      EAAVTQSPRNKVAVTGGKVTLSCNQTNN-HNNMYWYRQDTGHGLRLIHYSYGAGSTEKGD     59
FL9.38      EAAVTQSPRSKVAVTGGKVTLSCHQTNN-HDYMYWYRQDTGHGLRLIHYSYVADSTEKGD     59
FL9.15      DSGVVQSPRHIIKEKGGRSVLTCIPISG-HSNVVWYQQTLGKELKFLIQHYEKVERDKGF     59
FL9.35      DSGVVQSPRHIIKEKGGRSVLTCIPISG-HSNVVWYQQTLGKELKFLIQHYEKVERDKGF     59
FL9.30      DSGVVQSPRHIIKEKGGRSVLTCIPISG-HSNVVWYQQTLGKELKFLIQHYEKVERDKGF     59
FL9.2       DSGVVQSPRHIIKEKGGRSVLTCIPISG-HSNVVWYQQTLGKELKFLIQHYEKVERDKGF     59
FL9.40      DSGVVQSPRHIIKEKGGRSVLTCIPISG-HSNVVWYQQTLGKELKFLIQHYEKVERDKGF     59
FL9.23      NSGVVQSPRYIIKGKGERSILKCIPISG-HLSVAWYQQTQGQELKFFIQHYDKMERDKGN     59
FL9.5       NSGVVQSPRYIIKGKGERSILKCIPISG-HLSVAWYQQTQGQELKFFIQHYDKMERDKGN     59
FL9.8       NSGVVQSPRYIIKGKGERSILKCIPISG-HLSVAWYQQTQGQELKFFIQHYDKMERDKGN     59
FL9.34      NSGVVQSPRYIIKGKGERSILKCIPISG-HLSVAWYQQTQGQELKFFIQHYDKMERDKGN     59
             : : *.**  :   *    * *   .. :  : **:*   : *: :       . :

FL9.41      LPGADYLATRVT--DTELRLQVANMSQGRTLYCTCSARQGS-GNTLYFGEGSRLIVV   114
FL9.32      IPDG-YKASRPSQENFSLILELATPSQTSVYFCASGTG----DERLFFGHGTKLSVL   111
FL9.38      IPDG-YKASRPSQENFSLILELASLSQTAVYFCASRDRGD--QNTLYFGAGTRLSVL   113
FL9.15      LPSR-FSVQQFDDYHSEMNMSALELEDSAMYFCASSLGQGN-YAEQFFGPGTRLTVL   114
FL9.35      LPSR-FSVQQFDDYHSEMNMSALELEDSAMYFCASSRTGGS-AETLYFGSGTRLTVL   114
FL9.30      LPSR-FSVQQFDDYHSEMNMSALELEDSAMYFCASSRRPAS-AETLYFGSGTRLTVL   114
FL9.2       LPSR-FSVQQFDDYHSEMNMSALELEDSAMYFCASSPRLAS-AETLYFGSGTRLTVL   114
FL9.40      LPSR-FSVQQFDDYHSEMNMSALELEDSAMYFCASSPRLGS-AETLYFGSGTRLTVL   114
FL9.23      LPSR-FSVQQFDDYHSEMNMSALELEDSAVYFCASSLRGV-SNERLFFGHGTKLSVL   114
FL9.5       LPSR-FSVQQFDDYHSEMNMSALELEDSAVYFCASSLTGA---YEQYFGPGTRLTVL   112
FL9.8       LPSR-FSVQQFDDYHSEMNMSALELEDSAVYFCASSLLGGPSAETLYFGSGTRLTVL   115
FL9.34      LPSR-FSVQQFDDYHSEMNMSALELEDSAVYFCASS--PGPSQNTLYFGAGTRLSVL   113
            :*.  : . :    . .: :.    .:    :*:.           :** *::* *:
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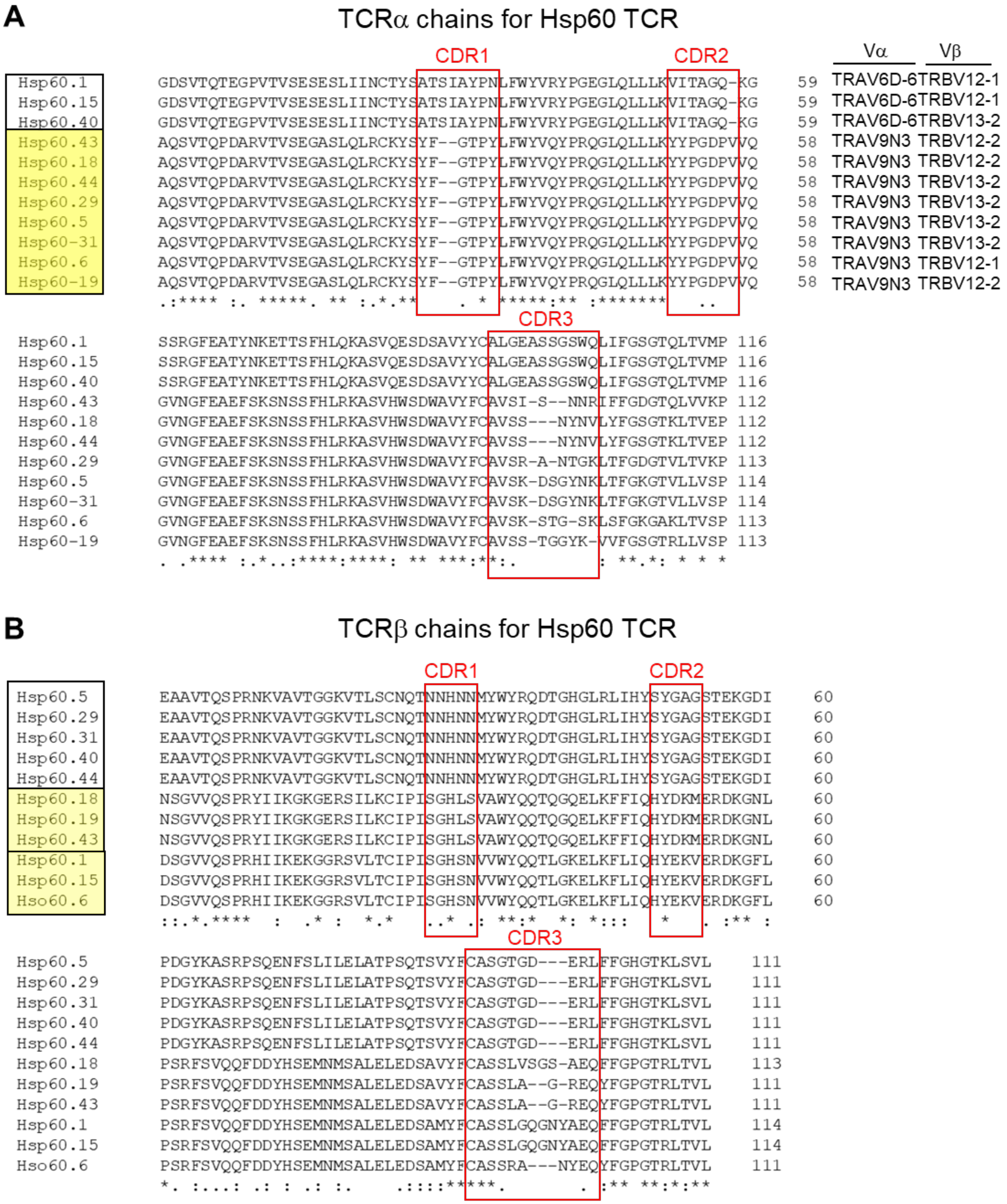
Supplemental Figure 2. TCR repertoire of Qa-1–Hsp60 Tet$^+$ CD8 T cells.

Single Qa-1–Hsp60-PE$^+$Qa-1–Hsp60-APC$^+$ cells were sorted and subjected to sequencing for TCRα and TCR TCRα and TCRβ pairs were analyzed based on their TCR V gene segments. Alignment of TCRα (**A**) and TCRβ (**B**) sequences obtained from Qa-1–Hsp60 Tet$^+$ single cells. TCR Vα and Vβ gene usage by each Qa-1–Hsp60 Tet$^+$ CD8 T cell are shown on the right. TRAV9N3 (Vα3.2) and/or TRBV12.1/2 (Vβ5.1/2) expressing CD8 T cell clones are highlighted.



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Hsp60.1    GDSVTQTEGPVTVSESESLIINCTYSATSIAYPNLFWYVRYPGEGLQLLLKVITAGQ-KG  59 TRAV6D-6TRBV12-1
Hsp60.15   GDSVTQTEGPVTVSESESLIINCTYSATSIAYPNLFWYVRYPGEGLQLLLKVITAGQ-KG  59 TRAV6D-6TRBV12-1
Hsp60.40   GDSVTQTEGPVTVSESESLIINCTYSATSIAYPNLFWYVRYPGEGLQLLLKVITAGQ-KG  59 TRAV6D-6TRBV13-2
Hsp60.43   AQSVTQPDARVTVSEGASLQLRCKYSYF--GTPYLFWYVQYPRQGLQLLLKYYPGDPVVQ  58 TRAV9N3 TRBV12-2
Hsp60.18   AQSVTQPDARVTVSEGASLQLRCKYSYF--GTPYLFWYVQYPRQGLQLLLKYYPGDPVVQ  58 TRAV9N3 TRBV12-2
Hsp60.44   AQSVTQPDARVTVSEGASLQLRCKYSYF--GTPYLFWYVQYPRQGLQLLLKYYPGDPVVQ  58 TRAV9N3 TRBV13-2
Hsp60.29   AQSVTQPDARVTVSEGASLQLRCKYSYF--GTPYLFWYVQYPRQGLQLLLKYYPGDPVVQ  58 TRAV9N3 TRBV13-2
Hsp60.5    AQSVTQPDARVTVSEGASLQLRCKYSYF--GTPYLFWYVQYPRQGLQLLLKYYPGDPVVQ  58 TRAV9N3 TRBV13-2
Hsp60-31   AQSVTQPDARVTVSEGASLQLRCKYSYF--GTPYLFWYVQYPRQGLQLLLKYYPGDPVVQ  58 TRAV9N3 TRBV13-2
Hsp60.6    AQSVTQPDARVTVSEGASLQLRCKYSYF--GTPYLFWYVQYPRQGLQLLLKYYPGDPVVQ  58 TRAV9N3 TRBV12-1
Hsp60-19   AQSVTQPDARVTVSEGASLQLRCKYSYF--GTPYLFWYVQYPRQGLQLLLKYYPGDPVVQ  58 TRAV9N3 TRBV12-2
           .:**** :. *****. ** :.*.**      . * *****:** :*******    ..

Hsp60.1    SSRGFEATYNKETTSFHLQKASVQESDSAVYYCALGEASSGSWQLIFGSGTQLTVMP 116
Hsp60.15   SSRGFEATYNKETTSFHLQKASVQESDSAVYYCALGEASSGSWQLIFGSGTQLTVMP 116
Hsp60.40   SSRGFEATYNKETTSFHLQKASVQESDSAVYYCALGEASSGSWQLIFGSGTQLTVMP 116
Hsp60.43   GVNGFEAEFSKSNSSFHLRKASVHWSDWAVYFCAVSI-S--NNRIFFGDGTQLVVKP 112
Hsp60.18   GVNGFEAEFSKSNSSFHLRKASVHWSDWAVYFCAVSS---NYNVLYFGSGTKLTVEP 112
Hsp60.44   GVNGFEAEFSKSNSSFHLRKASVHWSDWAVYFCAVSS---NYNVLYFGSGTKLTVEP 112
Hsp60.29   GVNGFEAEFSKSNSSFHLRKASVHWSDWAVYFCAVSR-A-NTGKLTFGDGTVLTVKP 113
Hsp60.5    GVNGFEAEFSKSNSSFHLRKASVHWSDWAVYFCAVSK-DSGYNKLTFGKGTVLLVSP 114
Hsp60-31   GVNGFEAEFSKSNSSFHLRKASVHWSDWAVYFCAVSK-DSGYNKLTFGKGTVLLVSP 114
Hsp60.6    GVNGFEAEFSKSNSSFHLRKASVHWSDWAVYFCAVSK-STG-SKLSFGKGAKLTVSP 113
Hsp60-19   GVNGFEAEFSKSNSSFHLRKASVHWSDWAVYFCAVSS-TGGYK-VVFGSGTRLLVSP 113
           . .**** :.*..:****:****: ** ***:**:.       : **.*: * * *
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Hsp60.5    EAAVTQSPRNKVAVTGGKVTLSCNQTNNHNNMYWYRQDTGHGLRLIHYSYGAGSTEKGDI   60
Hsp60.29   EAAVTQSPRNKVAVTGGKVTLSCNQTNNHNNMYWYRQDTGHGLRLIHYSYGAGSTEKGDI   60
Hsp60.31   EAAVTQSPRNKVAVTGGKVTLSCNQTNNHNNMYWYRQDTGHGLRLIHYSYGAGSTEKGDI   60
Hsp60.40   EAAVTQSPRNKVAVTGGKVTLSCNQTNNHNNMYWYRQDTGHGLRLIHYSYGAGSTEKGDI   60
Hsp60.44   EAAVTQSPRNKVAVTGGKVTLSCNQTNNHNNMYWYRQDTGHGLRLIHYSYGAGSTEKGDI   60
Hsp60.18   NSGVVQSPRYIIKGKGERSILKCIPISGHLSVAWYQQTQGQELKFFIQHYDKMERDKGNL   60
Hsp60.19   NSGVVQSPRYIIKGKGERSILKCIPISGHLSVAWYQQTQGQELKFFIQHYDKMERDKGNL   60
Hsp60.43   NSGVVQSPRYIIKGKGERSILKCIPISGHLSVAWYQQTQGQELKFFIQHYDKMERDKGNL   60
Hsp60.1    DSGVVQSPRHIIKEKGGRSVLTCIPISGHSNVVWYQQTLGKELKFLIQHYEKVERDKGFL   60
Hsp60.15   DSGVVQSPRHIIKEKGGRSVLTCIPISGHSNVVWYQQTLGKELKFLIQHYEKVERDKGFL   60
Hso60.6    DSGVVQSPRHIIKEKGGRSVLTCIPISGHSNVVWYQQTLGKELKFLIQHYEKVERDKGFL   60
           ::.*.****   :   .* :   *.*   ..* .: **:*  *: *:::  *   . :** :

Hsp60.5    PDGYKASRPSQENFSLILELATPSQTSVYFCASGTGD---ERLFFGHGTKLSVL     111
Hsp60.29   PDGYKASRPSQENFSLILELATPSQTSVYFCASGTGD---ERLFFGHGTKLSVL     111
Hsp60.31   PDGYKASRPSQENFSLILELATPSQTSVYFCASGTGD---ERLFFGHGTKLSVL     111
Hsp60.40   PDGYKASRPSQENFSLILELATPSQTSVYFCASGTGD---ERLFFGHGTKLSVL     111
Hsp60.44   PDGYKASRPSQENFSLILELATPSQTSVYFCASGTGD---ERLFFGHGTKLSVL     111
Hsp60.18   PSRFSVQQFDDYHSEMNMSALELEDSAVYFCASSLVSGS-AEQFFGPGTRLTVL     113
Hsp60.19   PSRFSVQQFDDYHSEMNMSALELEDSAVYFCASSLA--G-REQYFGPGTRLTVL     111
Hsp60.43   PSRFSVQQFDDYHSEMNMSALELEDSAVYFCASSLA--G-REQYFGPGTRLTVL     111
Hsp60.1    PSRFSVQQFDDYHSEMNMSALELEDSAMYFCASSLGQGNYAEQFFGPGTRLTVL     114
Hsp60.15   PSRFSVQQFDDYHSEMNMSALELEDSAMYFCASSLGQGNYAEQFFGPGTRLTVL     114
Hso60.6    PSRFSVQQFDDYHSEMNMSALELEDSAMYFCASSRA---NYEQYFGPGTRLTVL     111
           *. :...: .: : .: :.    .::::*****.       . :** **:*:**
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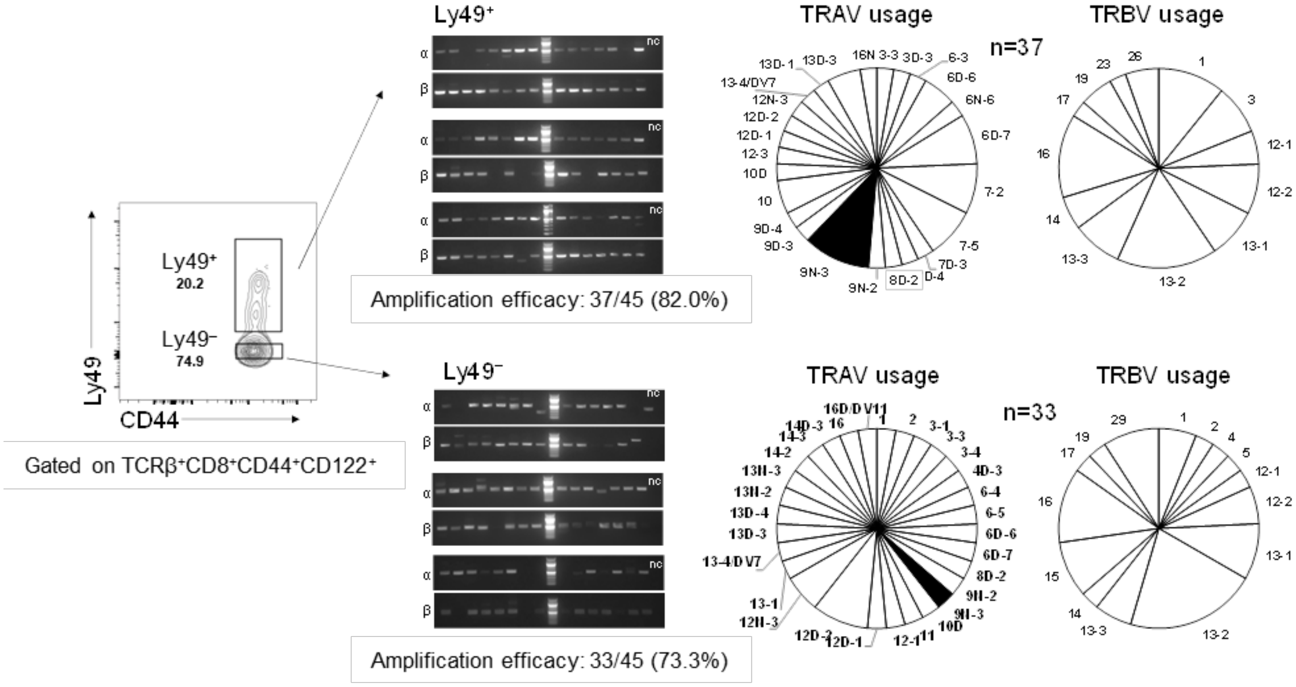
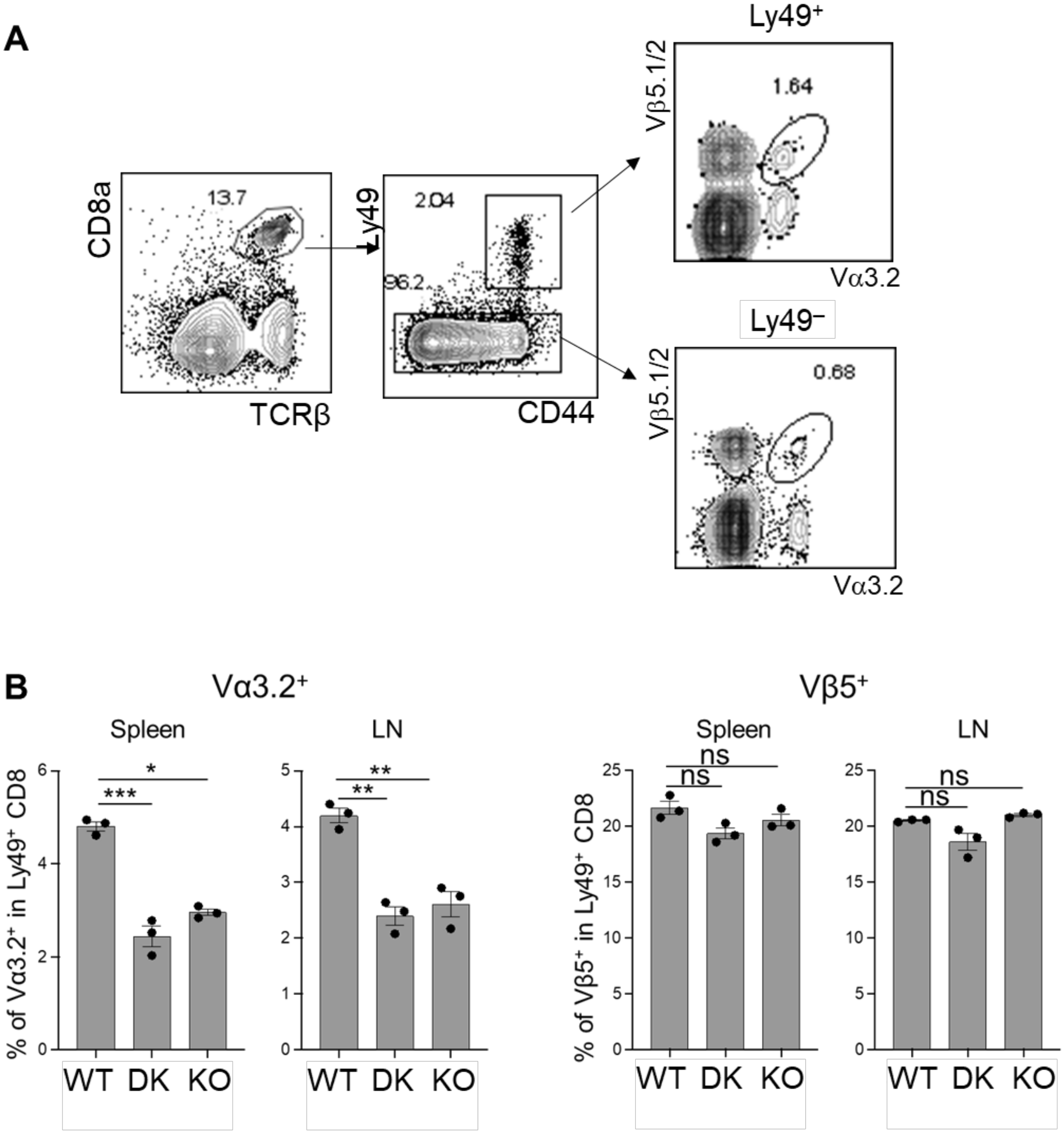
Supplementary Figure 3. Control study of TCR chain usage:

A single-cell sorting technique was utilized to collect two types of T cells: TCRβ$^+$CD8$^+$CD44$^+$CD122$^+$Ly49$^+$ T cells (45 cells) and TCRβ$^+$CD8$^+$CD44$^+$CD122$^+$Ly49$^-$ T cells (45 cells). The sorted cells underwent RT-PCR amplification of TCR α and β chains, followed by electrophoresis. Paired amplification was observed in 37 out of 45 Ly49$^+$ cells (82%) and 33 out of 45 Ly49$^-$ cells (73.3%). Sanger sequencing analysis revealed the specific TCR chain usage. Among the Ly49$^+$ cells, 4 cells exhibited TRAV9N-3 (Vα3.2) gene presence (10.8%), while only 1 cell displayed TRAV9N-3 positivity (3%) in the Ly49$^-$ population.



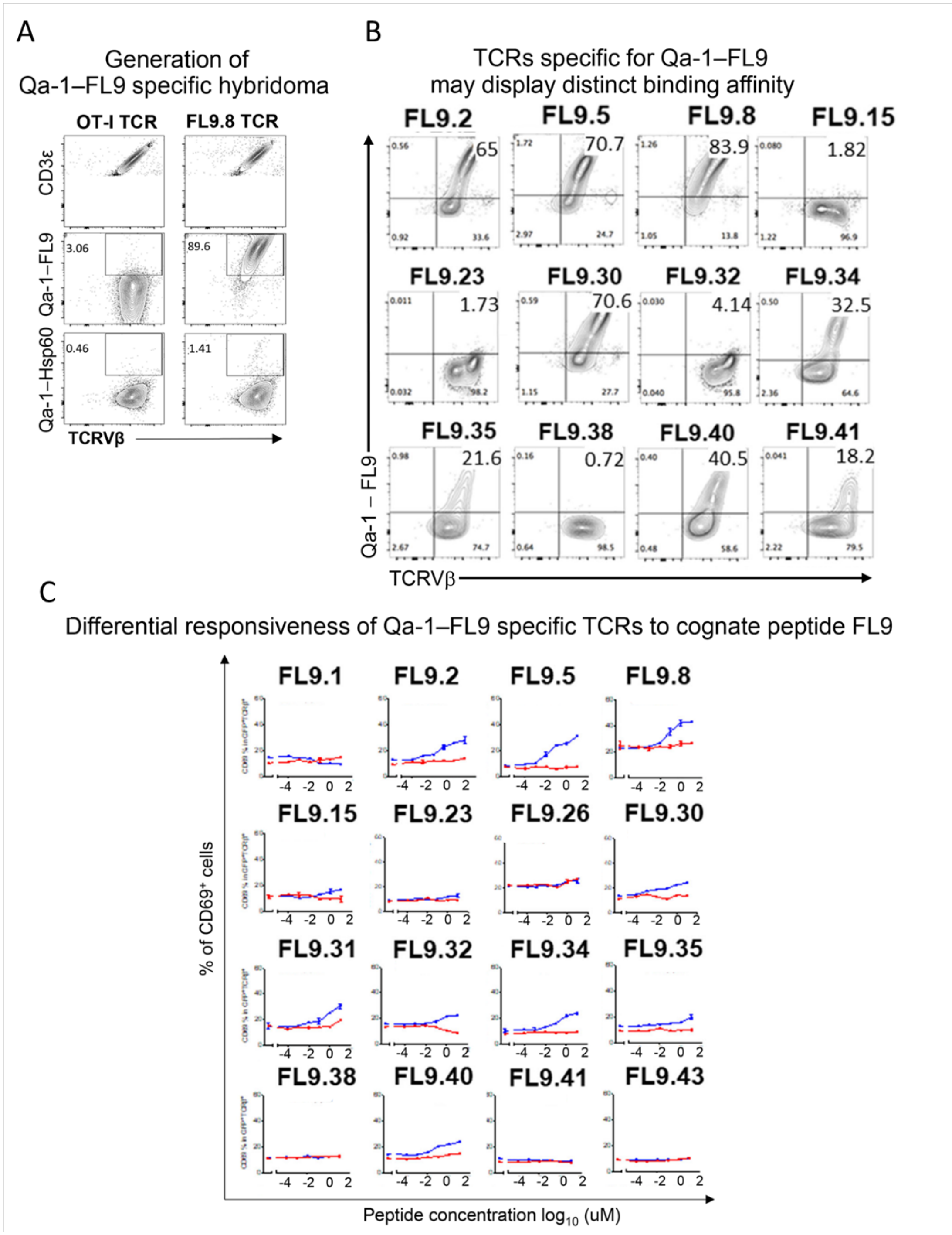
Supplemental Figure 4. Gating strategy for detection of Ly49$^+$Vα3.2$^+$Vβ5$^+$ CD8 T cells.

A) Gating strategy for Vα3.2$^+$Vβ5$^+$ CD8 cell detection. Frequency of Vα3.2$^+$Vβ5$^+$ CD8 cells in the Ly49$^+$ and Ly49$^-$ CD8 cells. **B**) Frequency of Vα3.2$^+$ or Vβ5$^+$ cells within Ly49$^+$ CD8 cells in spleen and LNs of WT B6, Qa-1.D227K KI (DK) and Qa-1 KO (KO) mice at 8 weeks of age.



Supplemental Figure 5. Generation of FL9 TCR$^+$ hybridoma and analysis of their responsiveness to FL9 peptide.

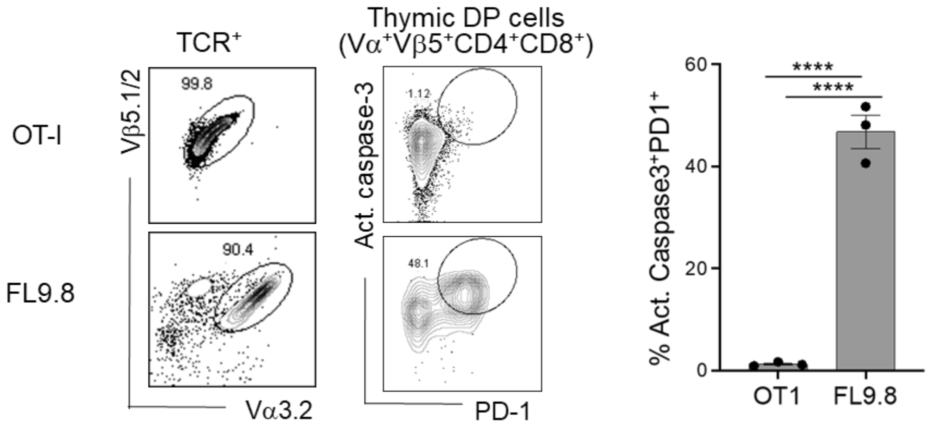
A) 58C$\alpha^-\beta^-$ hybridomas were transduced with OT-I TCR or FL9 TCRs that were identified from single cell TCR sequencing from Qa-1–FL9 tet$^+$ CD8 T cells. Correct folding and assembly of transduced TCRs and their expected specificity were tested by staining with anti-CD3, anti-TCR Vβ and Qa-1–Hsp60 or Qa-1–FL9 tetramers. **B**) Qa-1–FL9 tetramer-based detection of TCRs on 58C hybridomas that were transduced with individual TCR pairs (sequences shown in Suppl. Fig. 1) isolated from Qa-1–FL9-specific single CD8 T cells. **C**) Responsiveness of FL9 TCR$^+$ hybridoma to increasing concentrations of FL9 peptide depicted by surface CD69 expression.



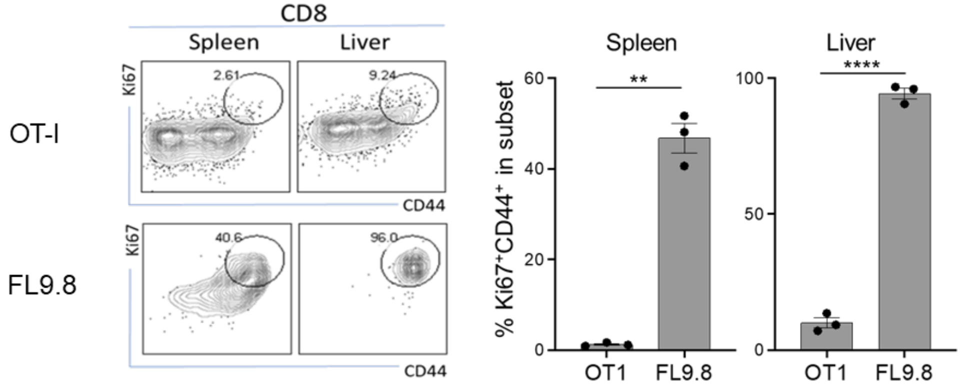
Supplemental Figure 6. **Qa-1-dependent differentiation of FL9 T cells.**

A) Tg TCR⁺ cells (Vα3.2⁺Vβ5⁺) in TCR⁺ thymocytes and percent of active-Caspase 3⁺PD1⁺ cells in DP (CD4⁺CD8⁺) thymocytes in OT-I → WT B6, FL9.8 Tg → WT B6 BM chimera 8 wks after BM reconstitution. **B**) Ki67 and CD44 expression by OT-I and FL9.8 TCR Tg CD8⁺ T cells was measured as an indication of Ag encounter in spleen and liver of OT-I → WT B6 and FL9.8 Tg → WT B6 BM chimeras 8 wks after BM reconstitution. OT-1 is also used as a control in Fig. 1H. **C)** TCR and CD8 expression on polyclonal non-Tg CD8 cells, OT-I, FL9.2 and FL9.8 Tg T cells.

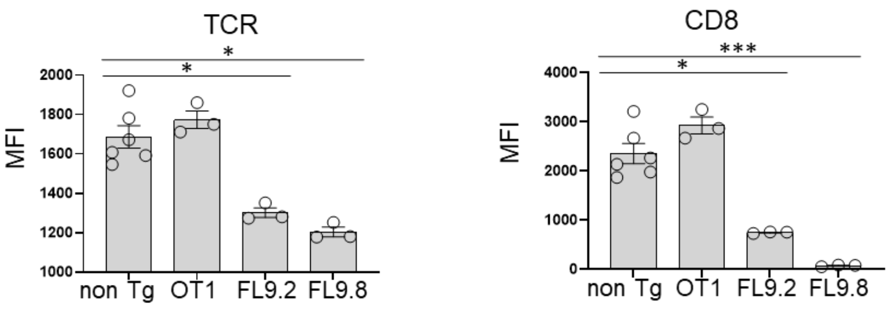
A Thymic DP cells in FL9 Tg mice show features of self-reactive T cells subject to negative selection



B Ki67 and CD44 expression in the periphery establishes recognition of self-antigens by FL9 cells



C TCR and CD8 expression on FL9 Tg T cells reflects chronic Ag activation

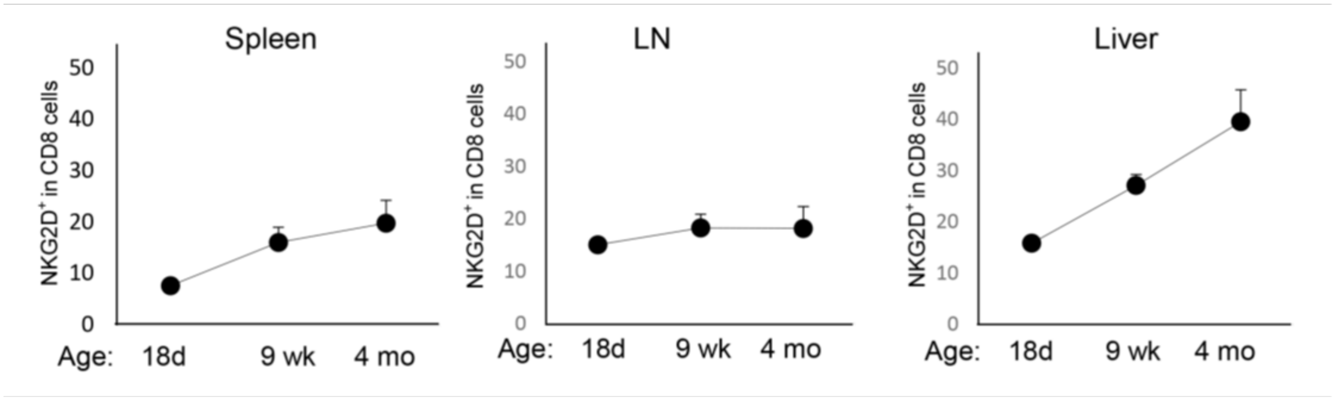


Supplemental Figure 7. NKG2D expression by FL9 TCR Tg T cells.

Acquisition of NKG2D expression by FL9.2 (**A**) and FL9.8 (**B**) T cells with age. Percentage of NKG2D$^+$ cells within CD8$\alpha\beta^+$ FL9 T cells from spleen, LN and liver in FL9 TCR Tg mice at the ages of 18 days, 9 wks and 4 mos.

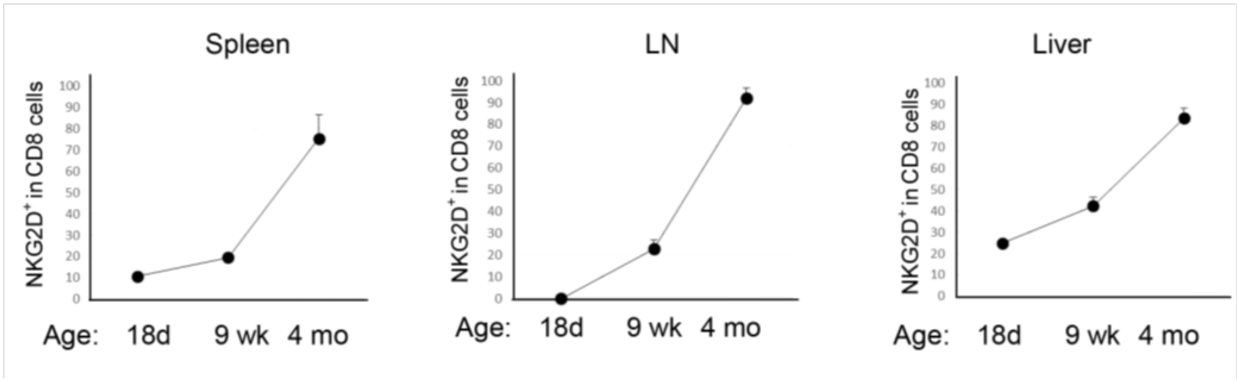
A

Increased expression NKG2D with age by FL9.2 T cells



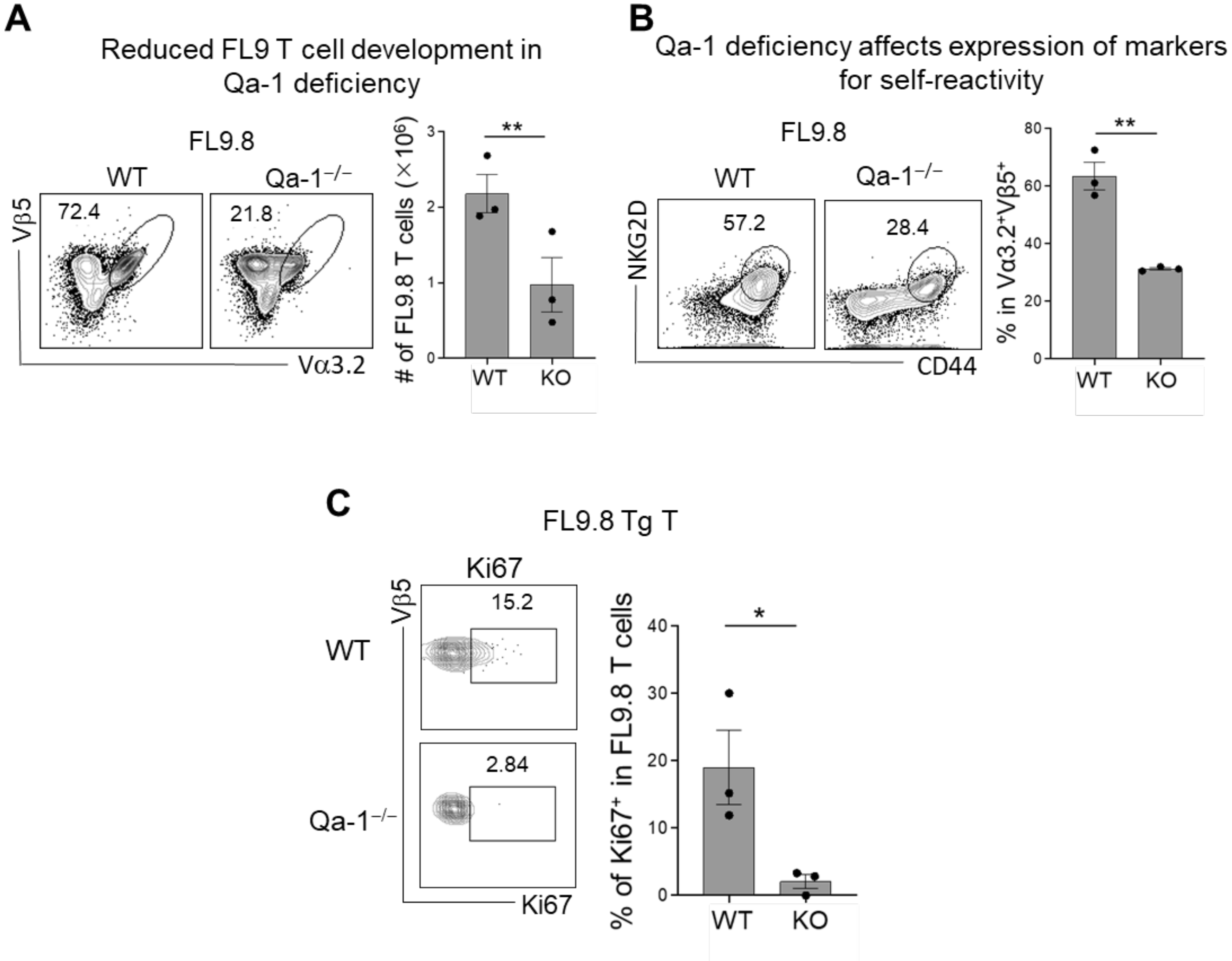
B

Increased expression of NKG2D with age by FL9.8 T cells



Supplemental Figure 8. Qa-1 dependent phenotype acquisition by FL9.8 Tg T cells.

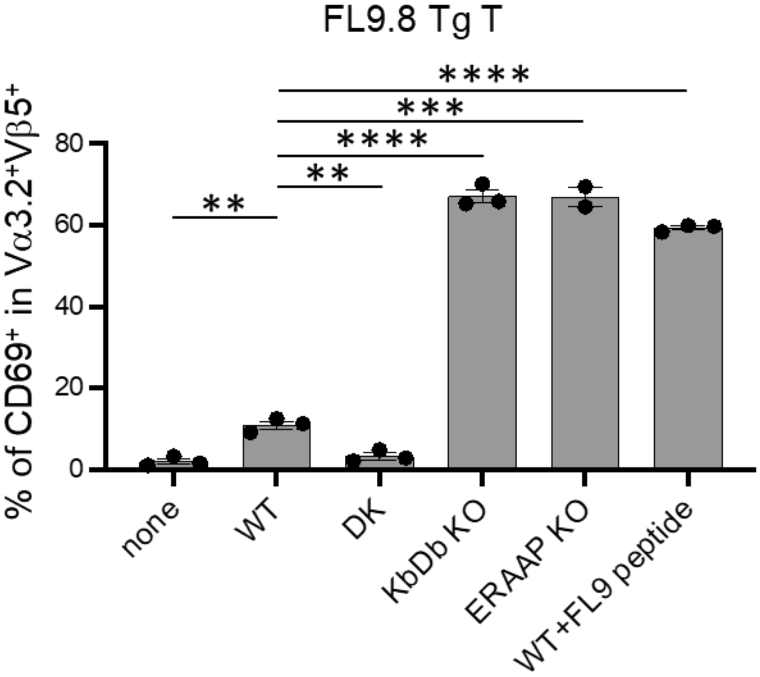
A) Frequency of $V\alpha3.2^+V\beta5^+$ T cells in TCRβ^+ cells from FL9.8 TCR Tg mice on Qa-1 WT and KO backgrounds. Representative FACS plots for detection of $V\alpha3.2^+V\beta5^+$ cells in spleen are shown on the left. **B**) Expression of CD44 and NKG2D by FL9.8 TCR Tg T cells in spleen and LNs of Qa-1 WT and Qa-1 KO mice. Representative FACS plots for $NKG2D^+CD44^+$ cells in spleens of FL9.8 TCR Tg mice are shown on the left. **C)** Expression of Ki67 by FL9.8 T cells in the LNs of WT.FL9.8 TCR Tg and Qa-$1^{-/-}$.FL9.8 TCR Tg mice at 8 wks of age.



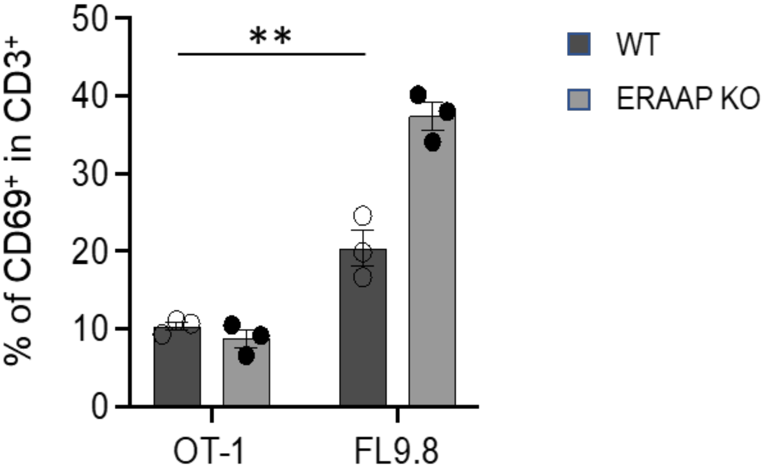
Supplemental Figure 9. FL9 Tg CD8 T cells recognize activated CD4 T cells.

A) ConA-stimulated CD4 cells from WT B6, Qa-1.D227K KI (DK), K^bD^b KO and ERAAP KO mice were co-cultured with FL9.8 T cells isolated from spleen and LNs of FL9.8 TCR Tg mice. After 20 hrs, CD69 expression on FL9 Tg T cells was measured as a readout of TCR stimulation. ConA-stimulated WT CD4 cells loaded with FL9 peptide were used as a positive control. **B)** OT-I or FL9.8 TCR^+ hybridomas were co-cultured with ConA-stimulated CD4 cells from WT or ERAAP KO mice**.** Stimulation of OT-1 or FL9 TCR was measured according to CD69 expression by hybridoma cells. Mean ± SEM is indicated. ****P < 0.0001, ***P < 0.001, **P < 0.01, *P < 0.05.

A

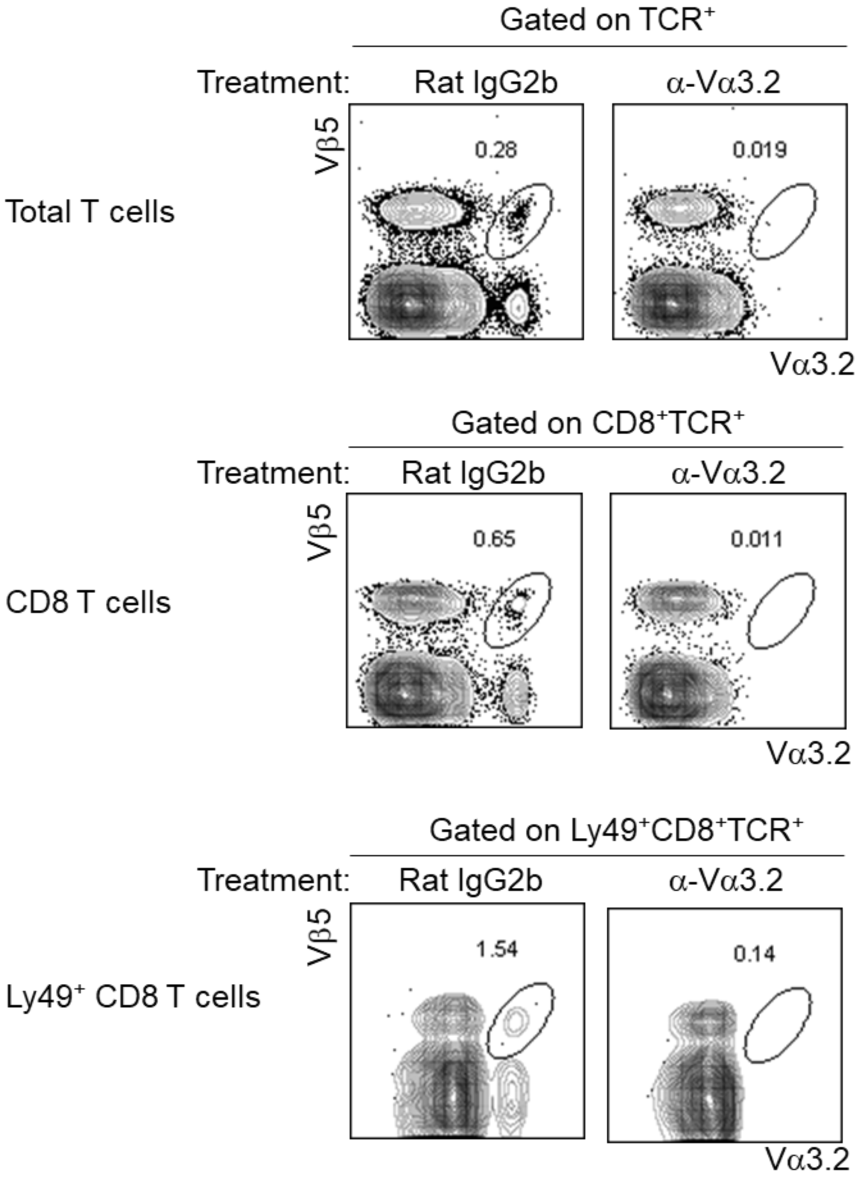


B



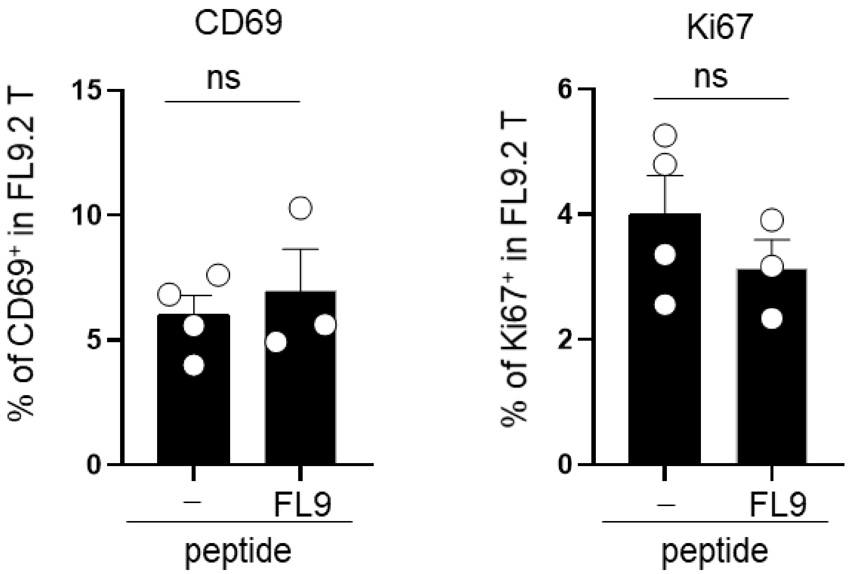
Supplemental Figure 10. Antibody-dependent depletion of $V\alpha3.2^+$ $Ly49^+$ CD8 T cells.

WT B6 and B6.Qa-1.D227K mice were immunized with Ova/CFA along with injection of rat IgG2b or anti-$V\alpha3.2$ Abs at day 0. These mice were boosted with Ova/IFA on day 8 and also injected with Abs. At day 15, the presence of $V\alpha3.2^+V\beta5^+$ cells was assessed in total T, CD8 T and $Ly49^+$ CD8 T cells. Shown are plots from analysis of spleen cells from WT mice.



Supplemental Figure 11. Failure of native FL9 peptide to stimulate FL9.2 T cells.

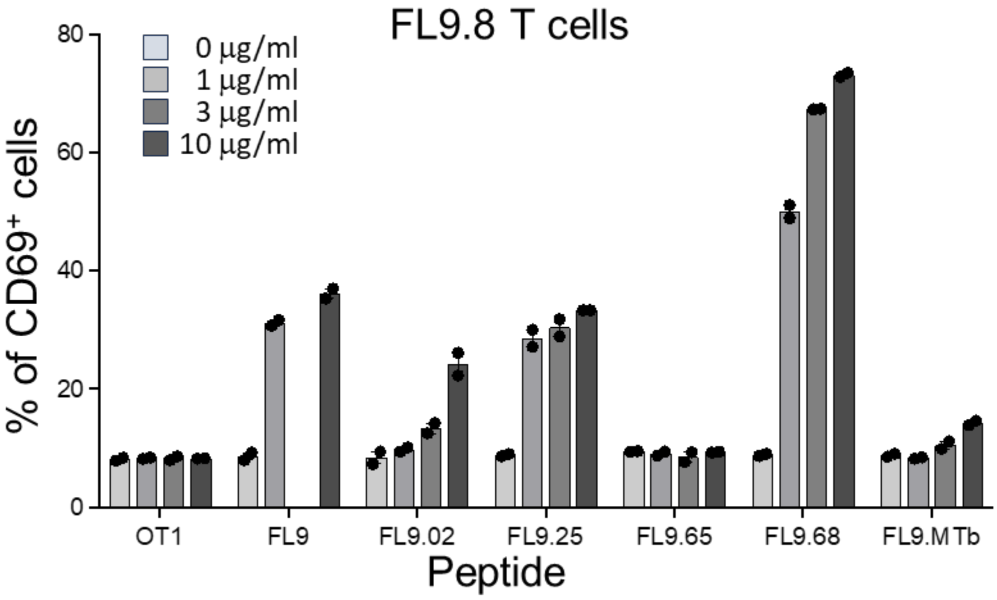
CD45.1$^+$ B6 hosts were adoptively transferred with FL9.2 T cells and immunized i.p. with FL9 in CFA or no peptide (CFA alone) on day 0. Three days later, activation (CD69) and proliferation (Ki67) of FL9.2 T cells were measured.



Supplemental Figure 12. Identification of superagonist peptides.

Activation of FL9.8 T cells after stimulation with FL9 variants selected from the library screen described in Fig. 4. Dose-dependent activation of FL9.8 T cells was measured by culturing FL9.8 T cells with EL4 (Qa-1$^+$) at various concentrations of the indicated peptides (0, 1, 3 and 10μg/ml).

OT1: SIINFEKL
FL: FYAEATPML
FL-02: FCAEATPML
FL-25: FYGEATPML
FL-65: FYAEATHML
FL-68: FYAEATLML
MTb: FYAEASPML



Supplemental Table 1. Primer sequences for the amplification of TCRα and TCRβ sequences

Primers for TCRα	
AL-1	AAGGATCCGAATTCCTGCAGGatgctgcagatgtgggggtttg
AL-10	AAGGATCCGAATTCCTGCAGGatgaagacatcccttcacac
AL-10-4	AAGGATCCGAATTCCTGCAGGatggataaaacatcccttc
AL-10D	AAGGATCCGAATTCCTGCAGGatggattaagacatcccttc
AL-11	AAGGATCCGAATTCCTGCAGGatgaaaaagYgcctKagtgcctg
AL-14-1	AAGGATCCGAATTCCTGCAGGatggacaMgaWcctgacag
AL-14D-1	AAGGATCCGAATTCCTGCAGGatggacaagattctgacag
AL-15-1	AAGGATCCGAATTCCTGCAGGatgcctcctcacagcctgYtc
AL-15-2	AAGGATCCGAATTCCTGCAGGatgcctcctcagagcctgctc
AL-16	AAGGATCCGAATTCCTGCAGGatgctgattctaagcctgYtg
AL-17	AAGGATCCGAATTCCTGCAGGatgttccYagtgaccattctg
AL-19	AAGGATCCGAATTCCTGCAGGatgactggcttcctgaag
AL-2	AAGGATCCGAATTCCTGCAGGatgaagcaggtggcaaaagt
AL-21	AAGGATCCGAATTCCTGCAGGatgggatgtgtgagtggaattg
AL-3-1	AAGGATCCGAATTCCTGCAGGatgaagacRgtgactgga
AL-3-4	AAGGATCCGAATTCCTGCAGGatgaaaacagtgRctgga
AL-4-2	AAGGATCCGAATTCCTGCAGGatggagaggagcccgggaac
AL-4-3	AAGGATCCGAATTCCTGCAGGatgSagaggaacctggttg
AL-4-4	AAGGATCCGAATTCCTGCAGGatgcagaggaacctgggag
AL-5-1	AAGGATCCGAATTCCTGCAGGatgaagacagctattcatg
AL-5D-4	AAGGATCCGAATTCCTGCAGGatgaaaacataYgctcctac
AL-6-1	AAGGATCCGAATTCCTGCAGGatgaacWattcYccagcttta
AL-6-4	AAGGATCCGAATTCCTGCAGGatgaaYacttctccagYttta
AL-6-5	AAGGATCCGAATTCCTGCAGGatgaacctttRtcctgaactg
AL-6-6	AAGGATCCGAATTCCTGCAGGatgRactcttctccaggcttc
AL-7-1	AAGGATCCGAATTCCTGCAGGatgaagtccttgtgtgtttc
AL-7-2	AAGGATCCGAATTCCTGCAGGatgaaatccttKagtRtttc
AL-7-6	AAGGATCCGAATTCCTGCAGGatgcattccttacatgtttc
AL-7D-4	AAGGATCCGAATTCCTGCAGGatggtacaaacacagatgttc
AL-7D-4-	AAGGATCCGAATTCCTGCAGGatgaaatccttgagtgtttta
AL-8-1	AAGGATCCGAATTCCTGCAGGatgcacagcctcctRgggttg
AL-8-1-3	AAGGATCCGAATTCCTGCAGGatgcacagcctcctggggttg
AL-8-2	AAGGATCCGAATTCCTGCAGGatgaacagattcctgggaata
AL-9-1	AAGGATCCGAATTCCTGCAGGatgctcctggtYctcatctc
AL-9-2	AAGGATCCGAATTCCTGCAGGatgctcctggYgctcctcYcag
AL-9D-4	AAGGATCCGAATTCCTGCAGGatgctcctggcactcctcccag
AL-12-1	AAGGATCCGAATTCCTGCAGGatgcgtcctgDcacctgctc
AL-12D-1	AAGGATCCGAATTCCTGCAGGatgcgtcctgtcacctcctc
AL-13-1	AAGGATCCGAATTCCTGCAGGatgaacaggctgctgtgctctc
AL-13-2	AAGGATCCGAATTCCTGCAGGatgaagaggctgctgtgttctc
AL-13D-1	AAGGATCCGAATTCCTGCAGGatgaagaggctgctgagctctc

Primers for TCRβ	
BL-1	AAGGATCCGAATTCCTGCAGGatgtggcagttttgcattctg
BL-2	AAGGATCCGAATTCCTGCAGGatgggctccattttcctcag
BL-3	AAGGATCCGAATTCCTGCAGGatggatatctggcttctag
BL-4	AAGGATCCGAATTCCTGCAGGatgggctgtaggctcctaag
BL-5	AAGGATCCGAATTCCTGCAGGatgagctgcaggcttctc
BL-12-1	AAGGATCCGAATTCCTGCAGGatgtctaacactgtcctcgctg
BL-12-2	AAGGATCCGAATTCCTGCAGGatgtctaacactgccttccctg
BL-13-1	AAGGATCCGAATTCCTGCAGGatgggctccaggctctttc
BL-13-2	AAGGATCCGAATTCCTGCAGGatgggctccaggctcttcttc
BL-13-3	AAGGATCCGAATTCCTGCAGGatgggctccagactcttctttg
BL-14	AAGGATCCGAATTCCTGCAGGatgggcaccaggcttcttg
BL-15	AAGGATCCGAATTCCTGCAGGatgggcatccagaccctctg
BL-16	AAGGATCCGAATTCCTGCAGGatggcccccaggctccttttctg
BL-17	AAGGATCCGAATTCCTGCAGGatggatcctagacttctttg
BL-19	AAGGATCCGAATTCCTGCAGGatgaacaagtgggttttctg
BL-20	AAGGATCCGAATTCCTGCAGGatgttactgcttctattacttc
BL-23	AAGGATCCGAATTCCTGCAGGatgggtgcacggctcatttg
BL-24	AAGGATCCGAATTCCTGCAGGatgggtgcaagactgctctg
BL-26	AAGGATCCGAATTCCTGCAGGatggctacaaggctcctctg
BL-29	AAGGATCCGAATTCCTGCAGGatgagagttaggctcatctctg
BL-30	AAGGATCCGAATTCCTGCAGGatgtggacattcctgctacttc
BL-31	AAGGATCCGAATTCCTGCAGGatgctgtactctctccttgc