# Supplementary Figures

**Neoantigens retention in patient derived xenograft models mediates autologous T cells activation in ovarian cancer**

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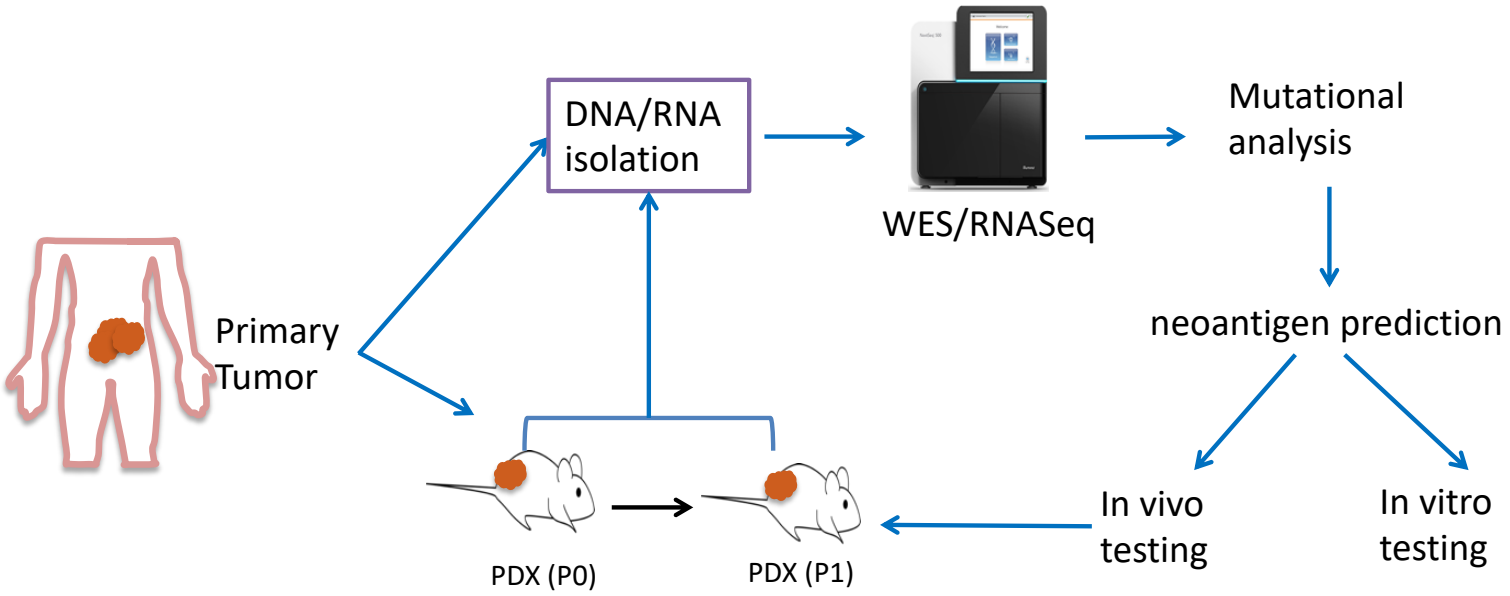
**Figure S1**




**Supplementary Figure 1.** Schematic overview of the experimental design

# Table S1

| **Cluster 1** | ANOVA + Tukey post hoc | | | |
|---|---|---|---|---|
| diff | lwr | upr | p | adj |
| P0-Primary | 24.595 | 12.790258 | 36.39974 | 7.62E-06 |
| P1-Primary | 30.56 | 18.755258 | 42.36474 | 3.40E-08 |
| P1-P0 | 5.965 | -5.839742 | 17.76974 | 4.56E-01 |
| | | | | |
| **Clsuter 2** | ANOVA + Tukey post hoc | | | |
| diff | lwr | upr | p | adj |
| P0-Primary | 7.818841 | -1.880991 | 17.518673 | 0.1403854 |
| P1-Primary | 5.291304 | -4.408528 | 14.991136 | 0.4036103 |
| P1-P0 | -2.527536 | -12.227368 | 7.172296 | 0.8119756 |
| | | | | |
| **Cluster 3** | ANOVA + Tukey post hoc | | | |
| diff | lwr | upr | p | adj |
| P0-Primary | -19.15 | -30.910591 | -7.3894089 | 0.000864491 |
| P1-Primary | -11.864286 | -23.624877 | -0.1036946 | 0.04762308 |
| P1-P0 | 7.285714 | -4.474877 | 19.0463054 | 0.297695708 |

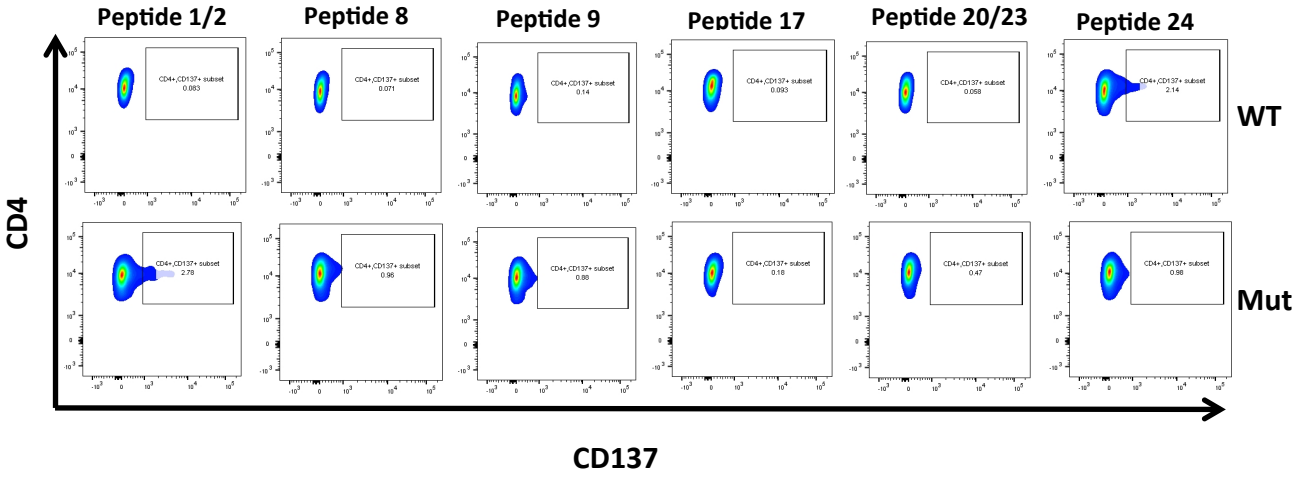
**Supplementary Table1.** Results from ANOVA analysis with post-hoc Tukey correction comparing the Variant Allele Frequency in clusters 1, 2 and 3

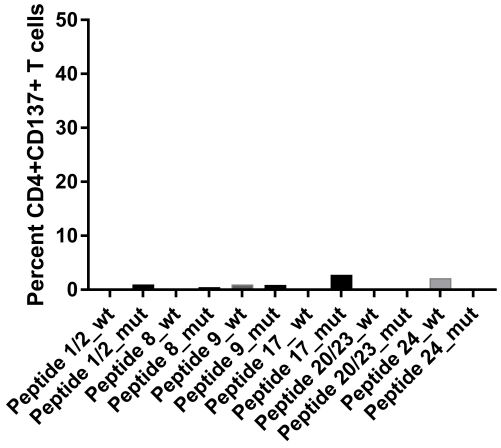
# Table S2

| Gene_name | Chromosome_no | POS | REF | ALT | Peptide_mut | Peptide_Wt | MUT_affinity | WT_affinity | HLA type | Immunogenic | Delta | ID |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SSC4D | 7 | 76397626 | C | A | YGTGHILLY | YGTGHILLD | 130.24 | 23661.68 | HLA-B3501 | Yes | -23531.44 | 1 |
| SSC4D | 7 | 76397626 | C | A | YGTGHILLY | YGTGHILLD | 213.34 | 17009.42 | HLA-C1203 | Yes | -16796.08 | 2 |
| LAMB3 | 1 | 209638534 | C | A | YVNPVSLQL | DVNPVSLQL | 89.97 | 10572.19 | HLA-C1203 | No | -10482.22 | 3 |
| CLEC10A | 17 | 7076078 | C | A | HCPHCPSVCF | HCPHCPSVCV | 197.04 | 10400.19 | HLA-B3501 | No | -10203.15 | 4 |
| CDK8 | 13 | 26393423 | C | T | LLTSEPIFY | LLTSEPIFH | 348.61 | 9773.93 | HLA-B3501 | No | -9425.32 | 5 |
| PRR14L | 22 | 31676998 | G | A | LPSTDSETG | PPSTDSETG | 202.34 | 6536.96 | HLA-B3501 | No | -6334.62 | 6 |
| GALNT7 | 4 | 173297796 | A | G | DATTCTVPL | DTTTCTVPL | 277.68 | 5537.42 | HLA-B3501 | No | -5259.74 | 7 |
| NAV1 | 1 | 201793862 | C | T | MAKAKAVAL | TAKAKAVAL | 311.38 | 4722.34 | HLA-B3501 | Yes | -4410.96 | 8 |
| TRO | X | 54930991 | C | G | SVGACGFSY | SLGACGFSY | 352.16 | 3145.21 | HLA-B3501 | Yes | -2793.05 | 9 |
| INO80 | 15 | 40983060 | T | C | EVPAAGRGH | EMPAAGRGH | 195.5 | 2104.14 | HLA-A2603 | No | -1908.64 | 10 |
| CSF2RB | 22 | 36937526 | C | T | LPEKQASSF | PPEKQASSF | 27.58 | 1900.41 | HLA-B3501 | No | -1872.83 | 11 |
| CNDP1 | 18 | 74576989 | G | C | EEYPNSSRV | EEYRNSSRV | 283.6 | 1998.84 | HLA-C1203 | No | -1715.24 | 12 |
| OR5H14 | 3 | 98149939 | T | A | DIIPLKISY | DIIPLLKISY | 132.89 | 1525.63 | HLA-A2501 | No | -1392.74 | 13 |
| FHL1 | X | 136209293 | C | T | VSKARKSPV | VSKARKPPV | 259.11 | 1389.97 | HLA-C1203 | No | -1130.86 | 14 |
| CLEC10A | 17 | 7076078 | C | A | VCFPVHSEM | VCVPVHSEM | 97.6 | 1155.46 | HLA-C1203 | Yes | -1057.86 | 15 |
| CSMD2 | 1 | 33542740 | C | G | ASYRSSVSF | GSYRSSVSF | 354.08 | 1369.23 | HLA-C1203 | Not tested | -1015.15 | 16 |
| CLEC10A | 17 | 7076078 | C | A | FPVHSEMLL | VPVHSEMLL | 41.22 | 991.08 | HLA-B3501 | Yes | -949.86 | 17 |
| VSIG4 | X | 66028109 | G | A | VVKDFSKLL | VVKDSSKLL | 235.21 | 1154.89 | HLA-C1203 | No | -919.68 | 18 |
| STYK1 | 12 | 10621948 | G | A | YPEVLPTSI | YPEVPPTSI | 462.21 | 1345.14 | HLA-B3501 | No | -882.93 | 19 |
| DDX60L | 4 | 168416796 | A | C | YVIFDEGHY | YVIFDEVHY | 93.25 | 732.52 | HLA-A2501 | Yes | -639.27 | 20 |
| USH2A | 1 | 215743308 | T | A | LIPEIPVVY | LIPEIPVEY | 273.7 | 861.68 | HLA-C1203 | No | -587.98 | 21 |
| HNRNPUL1 | 19 | 41264762 | G | C | HPEPGGYSG | HAEPGGYSG | 139.29 | 693.43 | HLA-B3501 | No | -554.14 | 22 |
| DDX60L | 4 | 168416796 | A | C | YVIFDEGHY | YVIFDEVHY | 159.96 | 708.09 | HLA-A2603 | Yes | -548.13 | 23 |
| OR51B4 | 11 | 5301398 | T | A | NLACADITF | KLACADITF | 97.15 | 597.07 | HLA-B3501 | Yes | -499.92 | 24 |
| PATZ1 | 22 | 31328842 | C | T | RGFSSASTL | RGFSSASAL | 366.19 | 826.03 | HLA-C1203 | No | -459.84 | 25 |
| BCAN | 1 | 156658616 | C | A | ETVLRYRCR | DTVLRYRCR | 434.01 | 892.24 | HLA-A2603 | No | -458.23 | 26 |
| PTBP3 | 9 | 112275909 | T | C | EIISLGLVF | EIISLGLIF | 296.98 | 567 | HLA-B3501 | No | -270.02 | 27 |
| KPNA1 | 3 | 122457766 | T | C | QMEKGSQAY | QMEKGNQAY | 87.81 | 212.09 | HLA-B3501 | No | -124.28 | 28 |

**Supplementary Table 2.** List of the mutations, neoantigens, affinity to the HLA, HLA type, difference MUT-WT and IDs

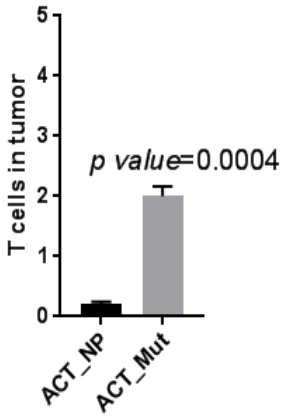
# Figure S2



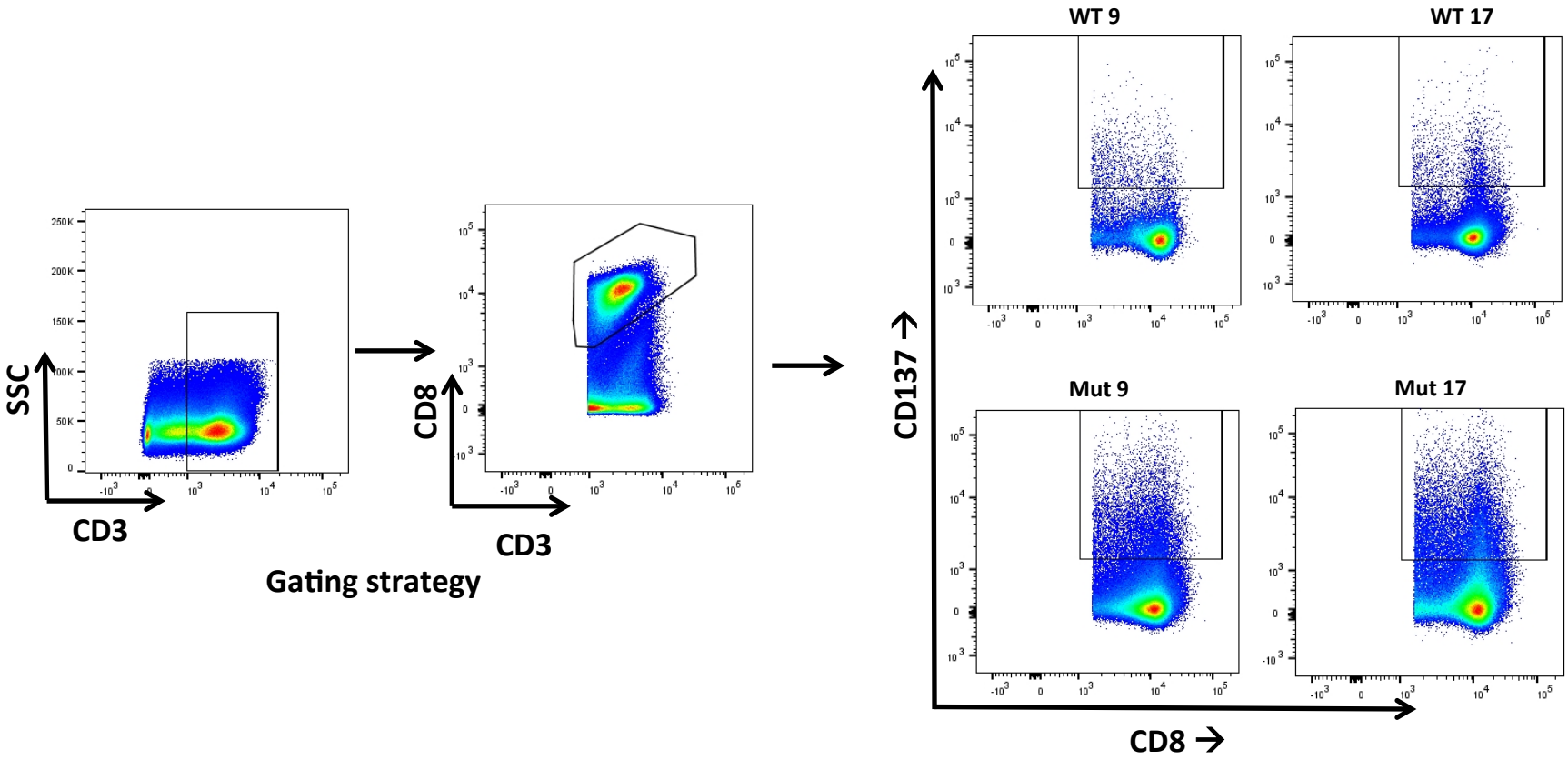

**Supplementary Figure 2.** Flow cytometry analysis of CD137 on CD4⁺ T cells after stimulation with potential neoantigens or their wild type peptides. **C)** Percentage of activated CD4 T cells after 12 hour incubation with 10 µm neoantigens or their wild type peptides

# Figure S3



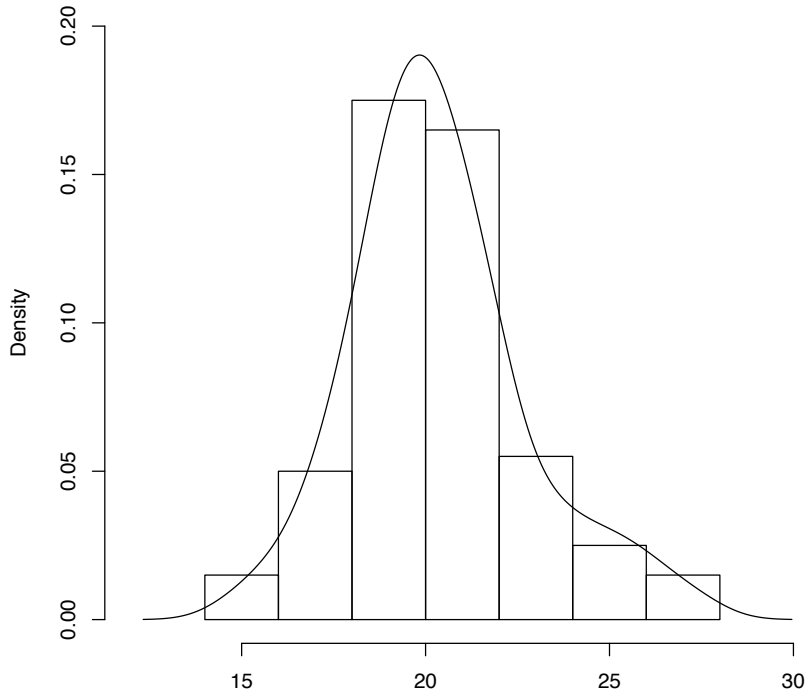

**Supplementary Figure 3.** Analysis of tumor resident T cells by flow cytometry in the PDX model of ovarian cancer infused with T cells stimulated with no peptide (ACT_NP) or with a cocktail of six neoantigens (ACT_Mut). Data shown as percentage of $CD3^+$ T cell at end point.

# Figure S4




**Supplementary Figure 4.** Selection of CD8+/CD137+ T cells for TCR sequencing. T cells were co-cultured with autologous APCs pulsed with peptide 9, 17 or the WT counterparts. Post stimulation (see methods), T cells were sorted and CD8+/CD137+ T cells stimulated with MUT peptides used for deep sequencing.

**Figure S5**




**Supplementary Figure 5.** Kernel distribution of 100 simulated GLAM score for random sequences

**Figure S6**