**Table S1. Sequence of the TCR junctional region and alpha and beta chain V(D)J usage of the original and regenerated CTLs.**

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| source | α | Vα | - | Jα | 3’Vα | N | 5’Jα |
| β | Vβ | Dβ | Jβ | 3’Vβ | N-Dβ-N | 5’Jβ |
| p-CTL LMP2#1 | α | TRAV26-1\*01 | - | TRAJ34\*01 | TGCATCGTCA | CCCGTTTTT | ACACCGACAAGCTCATCTTT |
| β | TRBV14\*01 | TRBD2\*01 | TRBJ2-1\*01 | TGTGCCAGCAGC | TCCCCGGGGAGTCGAC | CCTACAATGAGCAGTTCTTC |
| r-CD8αβLMP2#1-1 | α | TRAV26-1\*01 | - | TRAJ34\*01 | TGCATCGTCA | CCCGTTTTT | ACACCGACAAGCTCATCTTT |
| β | TRBV14\*01 | TRBD2\*01 | TRBJ2-1\*01 | TGTGCCAGCAGC | TCCCCGGGGAGTCGAC | CCTACAATGAGCAGTTCTTC |
| p-CTL LMP2#2 | α | TRAV25\*01 | - | TRAJ18\*01 | TGTGCAGGG | GAG | AGAGGCTCAACCCTGGGGAGGCTATA |
| β | TRBV7-9\*03 | TRBD1\*01 | TRBJ2-7\*01 | TGTGCCAGCAGC | CCACTGTCGACAGGGAA | CTACGAGCAGTACTTC |
| r-CD8αβ LMP2#2-13 | α | TRAV25\*01 | - | TRAJ18\*01 | TGTGCAGGG | GAG | AGAGGCTCAACCCTGGGGAGGCTATA |
| β | TRBV7-9\*03 | TRBD1\*01 | TRBJ2-7\*01 | TGTGCCAGCAGC | CCACTGTCGACAGGGAA | CTACGAGCAGTACTTC |
| p-CTL WT1#1 | α | TRAV12-3\*01 | - | TRAJ34\*01 | TGTGCAATGA | TAAGAGGG | AACACCGACAAGCTCATCTTT |
| β | TRBV5-5\*02 | - | TRBJ2-7\*01 | TGCCAGCAGCTT | CCC | CTCCTACGAGCAGTACTTC |
| r-CD8αβWT1#1-9 | α | TRAV12-3\*01 | - | TRAJ34\*01 | TGTGCAATGA | TAAGAGGG | AACACCGACAAGCTCATCTTT |
| β | TRBV5-5\*02 | - | TRBJ2-7\*01 | TGCCAGCAGCTT | CCC | CTCCTACGAGCAGTACTTC |
| p-CTL WT1#3 | α | TRAV12-1\*01 | - | TRAJ9\*01 | TGTGTGGTGA | GGGG | TGGAGGCTTCAAAACTATCTTT |
| β | TRBV20-1\*01 | TRBD1\*01 | TRBJ2-6\*01 | GCAGTGCTAGAG | CAGGGACGGG | TGGGGCCAACGTCCTGACTTTC |
| r-CD8αβ WT1#3-3 | α | TRAV12-1\*01 | - | TRAJ9\*01 | TGTGTGGTGA | GGGG | TGGAGGCTTCAAAACTATCTTT |
| β | TRBV20-1\*01 | TRBD1\*01 | TRBJ2-6\*01 | GCAGTGCTAGAG | CAGGGACGGG | TGGGGCCAACGTCCTGACTTTC |
| p-CTLWT1#9 | α | TRAV12-1\*01 | - | TRAJ9\*01 | TGTGTGGTGAA | G | GGAGGCTTCAAAACTATCTTT |
| β | TRBV20-1\*01 | TRBD2\*01 | TRBJ2-1\*01 | TGCAGTGCTAGA | TTGGGTAGCGGGGGA | TACAATGAGCAGTTCTTC |
| r-CD8αβWT1#9-2 | α | TRAV12-1\*01 | - | TRAJ9\*01 | TGTGTGGTGAA | G | GGAGGCTTCAAAACTATCTTT |
| β | TRBV20-1\*01 | TRBD2\*01 | TRBJ2-1\*01 | TGCAGTGCTAGA | TTGGGTAGCGGGGGA | TACAATGAGCAGTTCTTC |

p-CTL means primary CTLs and r-CD8αβ means regenerated CD8αβ T cells from T-iPSCs