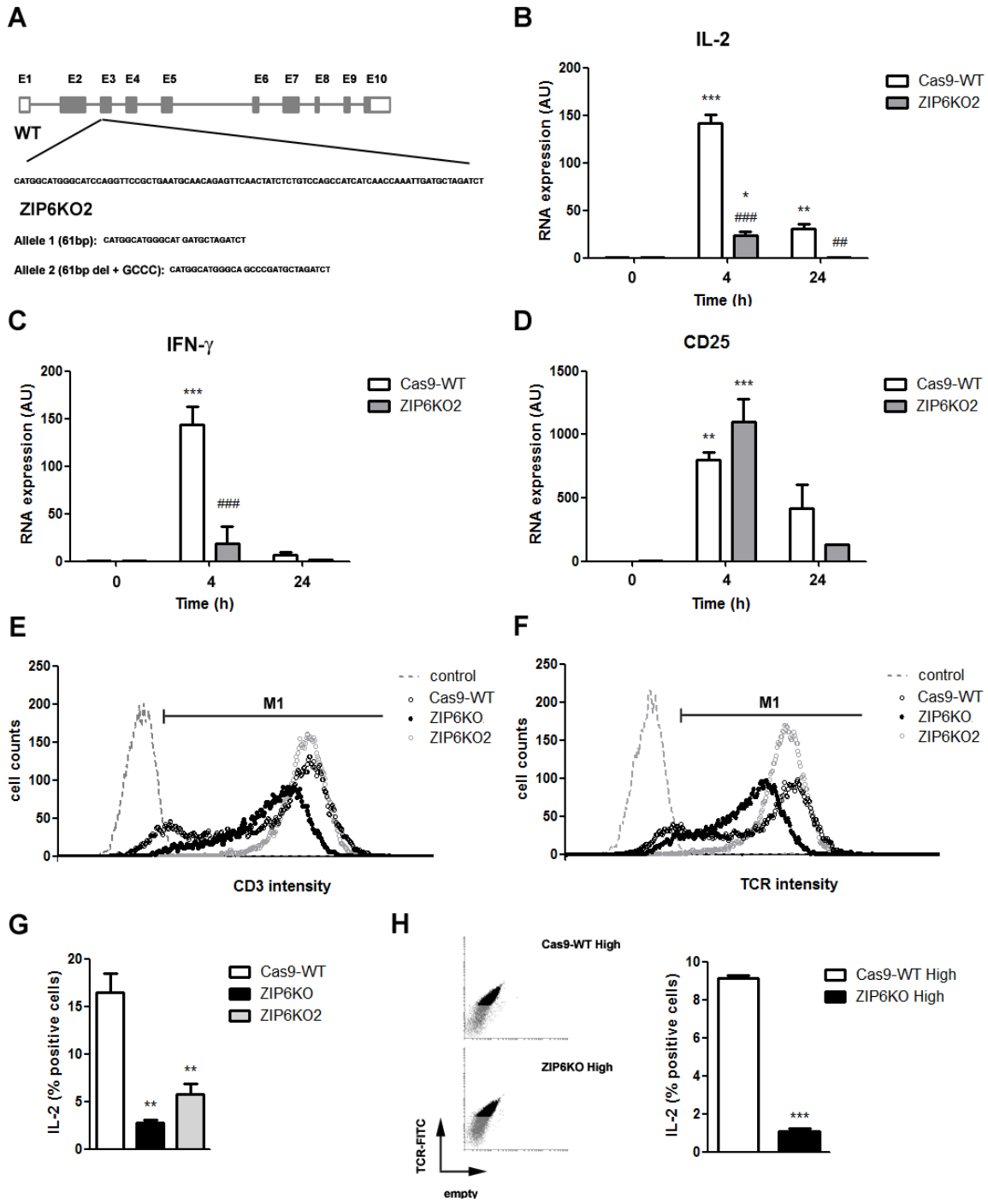

Supplementary Figure 1. A. Schematic representation of existing mutations in both alleles of the Slc39a6 gene in the ZIP6KO2 cell line generated from a Cas9 stable cell line transfected with gRNAs targeting exon 3. **B-D**. Real time PCR to quantify the expression of IL-2 (B), IFN-γ (C) and CD25 (D) in ZIP6KO2 and Cas9-WT cells activated for 4 and 24h with anti-CD3/anti-CD28 antibodies. **E,F**. Representative histogram of TCR (E) and CD3 (F) fluorescence intensity in ZIP6KO, ZIP6KO2 and Cas9-WT cells. M1 segment including cells with higher intensity than control cells non-stained (dashed line). **G**. Flow cytometry analysis of IL-2 immunostaining in ZIP6KO, ZIPKO2 and Cas9-WT cells upon 6h activation with anti-CD3/anti-CD28 antibodies. (n=3) **H.** IL-2 immunostaining (Bar graph) in ZIP6KO and Cas9-WT cells immunostained with anti-TCR and sorted as ZIP6KO High and Cas9-WT High cells (Dot blots). Cells were grown for one week after the sorting and they were activated for 6h with anti-CD3/anti-CD28 antibodies (n=6). Statistics: *<0.05; **<0.01; ***<0.001 ANOVA Bonferroni test compared to basal conditions (*) and between cell lines (#).

Supplementary Table I. Real time PCR primers

Primers	Forward sequence (5'→ 3')	Reverse sequence (5'→ 3')
hZip 1	GATTGGGGAAGACACTTGACTGCT	GAAAGAGGAAGGGGATTTGTTTGG
mZip 1	GATCACGCTGGCTTACAAGG	AGAAGACCAGGACACAAGCA
hZip 2	CCCTTGTCCTCTTGCTGTCACTCT	AGCTCCCGTGGAAGAATTTCTAGG
mZip 2	TTCTTGGGAGCAGGGTTGAT	GTACTGTCGATCCTCCAGCA
hZip 3	GTGGAGATATGAGGACCCCCTGTT	GATGAACTCAGCGCTAACCGATCT
mZip 3	AAGGTCCTCTGCATGGTGG	ATGTAGCCAGGAATACGCCA
hZip 4	AGACTGAGCCCAGAGTTGAGGCTA	TGTCGCAGAGTGCTACGTAGAGGA
mZip 4	CTCTAGCAGTCGGAGTAGGC	CACGTTGTGGAGCAGGAAAA
hZip 5	GAGCAGGAGCAGAACCATTACCTG	CAATGAGTGGTCCAGCAACAGAAG
mZip 5	GGATGGTCCTCCTGGGAGAT	CCTGAAGCAGCATGGCAAAG
hZip 6	CATAGCCATGAAGAACCAGCAATG	GAGAATCAAAGTGGGAGGGCTCTT
mZip 6	ACAACGCTGTCTCTGAAGGA	AAGCTCTTTCTGGGCTCACT
hZip 7	ACTGAAGGAGGAGCAGTGGACAGT	AGGCCCTAATGCCAAAGTAACCAT
mZip 7	GCCATTGGTGCTTCCTTTCG	TTGCAGTCACGAGTTGCAGA
hZip 8	CCTCGGATTGATTTTGACTCCACT	AGCAGGATTTGCATAGCATGTCAC
mZip 8	CAGTTGCTGTGTTTGGTGGA	GCATAGCAAGTCACACCGTT
hZip 9	GCCTAAAGAACTGGAAAGCCCACT	GTGTTTCACTTGCTTGGTGGTGTT
mZip 9	GGCAATGTTGGTGGGATGTT	TGTTTCCCCTCCAGAACCTC
hZip 10	TAGCCGTCTTCTGTCATGACTGC	TCATAGAGGGCAATCACCAGCATA
mZip 10	TGTTGAAAGGACTTGTGGCG	TACCGAGTCATCCGTTCCAG
hZip 11	TCTCCTAAGCATTTTGGTGGCCTA	TCTCTTCTTTCCACAGGGCTCACT
mZip 11	TTCATATTCTCCAGCGGGCA	CACTGGGAAGAAGGCAAAGG
hZip 12	CAACCACTCAAGAAGCCTCATCAA	AAGTACTGCCTGGTGAAAGCCAAG
mZip 12	CTGAACATGCTCACGACCAG	GCAGAGAAGCAAGCCTGATC
hZip 13	AAGAAGATCGGGCTCCTGACAAC	GAGAACAGCACCATTACCACGATG
mZip 13	CTGGACACCTGGATCTGCTC	TCCACCTAAGGCAAAGCTGA
hZip 14	CATTTGGTTTCAACCCTCTGGAAG	TTTCAGCCAGTAGCAAGCACTCTG
mZip 14	GGAAGATCTCATGGACCGCT	AGAATGGTGGGGCAGAACTC
hIL - 2	AACTCACCAGGATGCTCACA	GCACTTCCTCCAGAGGTTTG
hINF - γ	TGACCAGAGCATCCAAAAGA	CTCTTCGACCTCGAAACAGC
hCD25	CCTGGGACAACCAATGTCA	TGGACTTTGCATTTCTGTGG
hMLN51	CAAGGAAGGTCGTGCTGGTT	ACCAGACCGGCCACCAT
hRPL13A	CATAGGAAGCTGGGAGCAAG	GCCCTCCAATCAGTCTTCTG
mβ-actin	TGGAATCCTGTGGCATCCATGAAAC	TAAAACGCAGCTCAGTAACAGTCCG