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# Genome-wide analysis identifies NR4A1 as a key mediator of T cell dysfunction

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## **Supplementary Table Legends**

### **Supplementary Table 1. Ttol-cell-related genes list (2357 genes)**

This file listed differential genes in tolerant T cells, in comparison with activated Th1, Th2, Th17 cell subsets. Genes expression significantly enriched over 2 folds are shown. This table is related with Fig. 1c.

### **Supplementary Table 2. 174 commonly shared genes from Ttol, Texh and T-NF-AT**

After comparison of Ttol-relevant genes with NF-AT-induced genes in T<sub>NF-AT</sub> cell and Texh-relevant genes. 174 genes were found commonly shared and listed. This table is related with Extended data Fig. 1d.

### **Supplementary Table 3. Combinational analysis of gene profiling and histone modifications reveals unique transcriptional modules in Ttol cells**

This file contains a list of Ttol-cell-related 340 genes, whose transcriptional activities were consistent with their histone modification status. This table lists 112 upregulated genes, and 228 downregulated genes, and is related with Fig. 1h.

### **Supplementary Table 4. Overlay of Nr4a1-regulated genes with Ttol-relevant genes**

After comparison analysis of Nr4a1-regulated genes with Ttol-relevant genes, a total of 290 genes were found commonly shared, including 112 of induced genes, and 178 of repressed genes. This table is related with Fig. 4b.

### **Supplementary Table 5. list of ChIP-Seq samples**

This file contains details on ChIP-seq samples, clean reads, mapping reads, mapping ratio, and unique reads/ratio for each sample. The samples include anti-HA-Nr4a1, input control, Isotype IgG control, anti-c-Jun on RV-Nr4a1-, RV-vector-transduced T cells, plate-bound anti-CD3/anti-CD28-activated WT, and Nr4a1 KO T cells, as well as anti-H3K27ac on RV-Nr4a1-, RV-vector-transduced T cells, Naïve WT and Nr4a1 KO T cells, plate-bound anti-CD3/anti-CD28-activated WT, and Nr4a1 KO T cells.

### **Supplementary Table 6. list of gene downregulated by Nr4a1 (841) genes**

This file lists downregulated genes, whose gene loci were bound by Nr4a1 and/or with co-localized reduction of c-Jun peaks concomitantly. This table is related with Fig. 4h.

### **Supplementary Table 7. list of gene upregulated by Nr4a1 (860) genes**

This file lists upregulated genes, whose gene loci were bound by Nr4a1 and/or with co-localized enhancement of H3k27ac peaks concomitantly. This table is related with Fig. 4h.

Supplementary Figure 1 for Extended Data 9a - Uncropped scans with size marker indications

