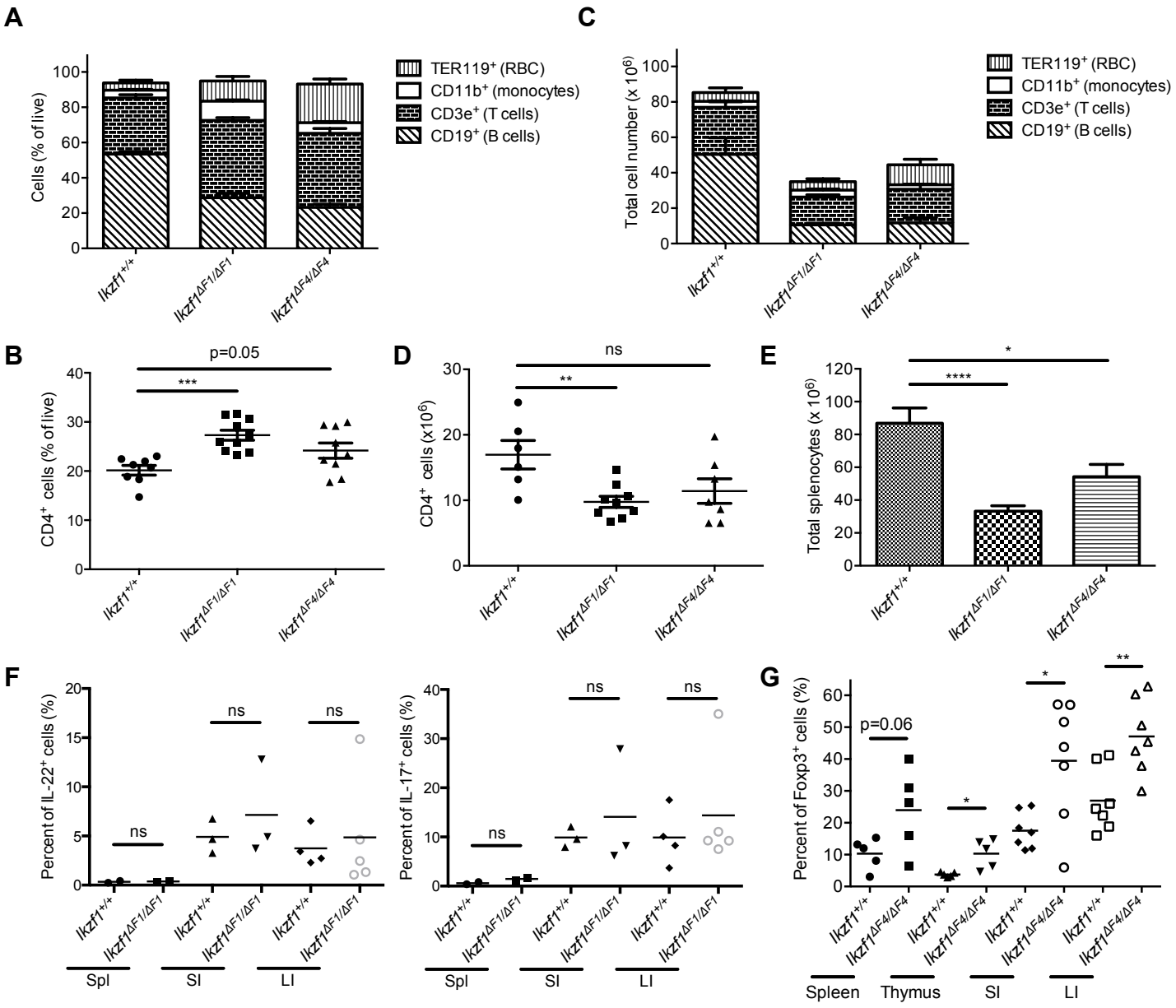
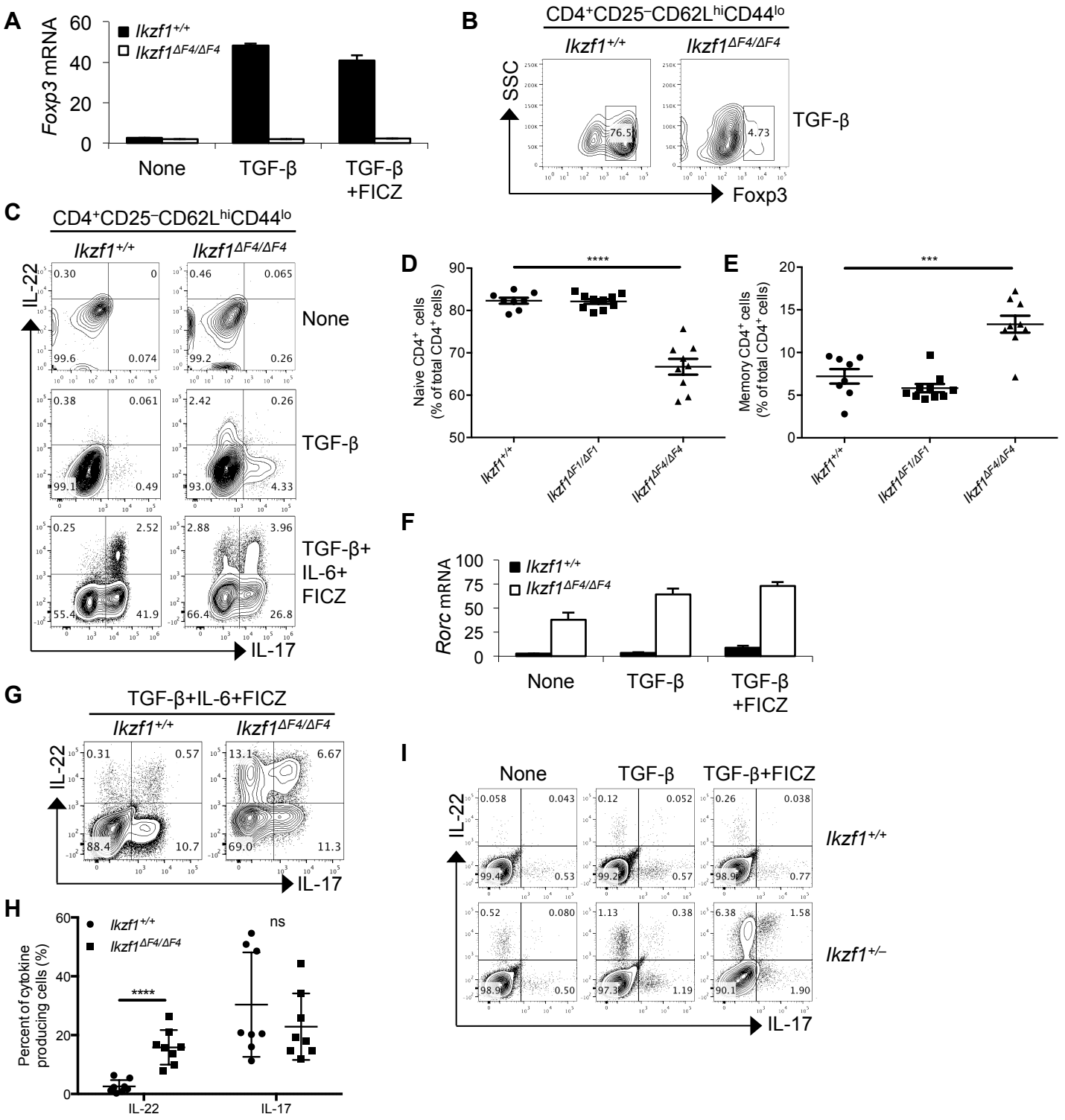
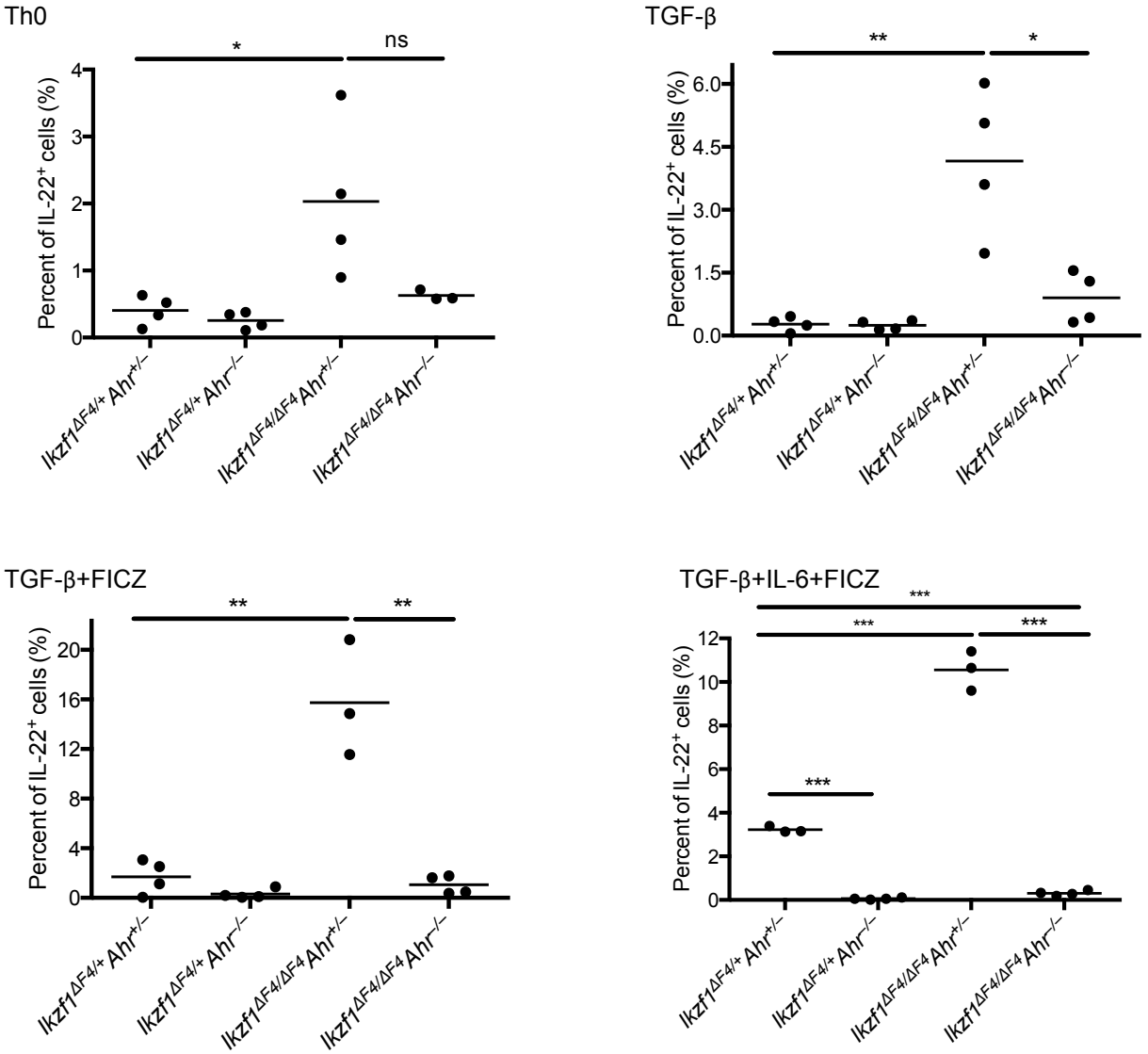


Supplemental Figure 1: Phenotypic analysis of Ikaros mutant splenocytes and CD4⁺ T cells
Splenocytes were isolated from mice of the indicated genotypes, counted, stained ex vivo for surface markers, and measured by flow cytometry (A-E). CD4⁺TCRβ⁺ cells were isolated from littermate mice of the indicated genotypes and stimulated ex vivo, and protein expression (F,G) was measured by intracellular staining and flow cytometry. Data are representative of at least four independent experiments. Data (A-G) are compiled from independent experiments and mean ± SEM are shown.



Supplemental Figure 2: Aberrant phenotypes of *Ikzf1*$^{\Delta F4/\Delta F4}$ bulk and naïve CD4$^+$ T cells
Bulk (A,F-I) or naïve (B,C) CD4$^+$ T cells were purified from littermate mice of the indicated genotypes and activated by anti-CD3/CD28 under the indicated conditions for 96 hours in culture. mRNA expression (A,F) was measured after 48 hours by realtime RT-PCR and mean ± SD of experimental triplicates are shown. Splenocytes were isolated from mice of the indicated genotypes, stained and analyzed by flow cytometry for naïve (CD4$^+$CD62L^{hi}CD44^{lo}) or memory (CD4$^+$CD62L^{lo}CD44^{hi}) cells (D,E). Protein expression (B,C,G-I) was measured after 96 hours by intracellular staining and flow cytometry. Data are representative of at least four independent experiments. Data (D,E,H) are compiled from independent experiments and mean ± SEM are shown.



Supplemental Figure 3: Ahr is required for aberrant IL-22 expression by *Ikzf1$^{\Delta F4/\Delta F4}$* CD4$^+$ T cells

CD4$^+$ T cells were purified from littermate mice of the indicated genotypes and activated by anti-CD3/CD28 antibodies with or without TGF-β, IL-6, and/or Ahr ligand FICZ. Protein expression was measured after 96 hours in culture by intracellular staining and flow cytometry. Data are compiled from independent experiments and mean ± SEM are shown (each dot represents one mouse).

Actin FW	CTTCTTTGCAGCTCCTTCGTT
Actin RV	AGGAGTCCTTCTGACCCATTC
IL22 FW	GACCAAACTCAGCAATCAGCTC
IL22 RV	TACAGACGCAAGCATTTCTCAG
IL17 FW	CTCCAGAAGGCCCTCAGACTAC
IL17 RV	AGCTTTCCCTCCGCATTGACACAG
IL21 FW	ATCCTGAACTTCTATCAGCTCCAC
IL21 RV	GCATTTAGCTATGTGCTTCTGTTTC
ROR gamma t FW	CCGCTGAGAGGGCTTCAC
ROR gamma t RV	TGCAGGAGTAGGCCACATTACA
Foxp3 FW	CCCAGGAAAGACAGCAACCTT
Foxp3 RV	TTCTCACAACCAGGCCACTTG
Ahr FW	GGCTTTCAGCAGTCTGATGTC
Ahr RV	CATGAAAGAAGCGTTCTCTGG
Cyp1a1 FW	TTTAAGAGCCTCACCCACGGTT
Cyp1a1 RV	ACCCAGCTACCCAACTCACAA
IL21-AcH3-F2	CAAGAAGATGACTACCAGACAGACA
IL21-AcH3-R2	GGGATGAATAAATAGGTAGCCGTAG

Supplemental Table 1: Primers for realtime RT-PCR and ChIP assays