

Figure S1. Gating strategy for flow cytometric analysis of cytokine expressing cells
(A) Gating of singlets and lymphocytes into populations of CD4 and CD8 positive cells. **(B)** Representative dot plots of cells stimulated either with medium alone (Nil) or ScpA. **(C)** Representative dot plot for cells stimulated with staphylococcal enterotoxin B (SEB) that was included as positive control.

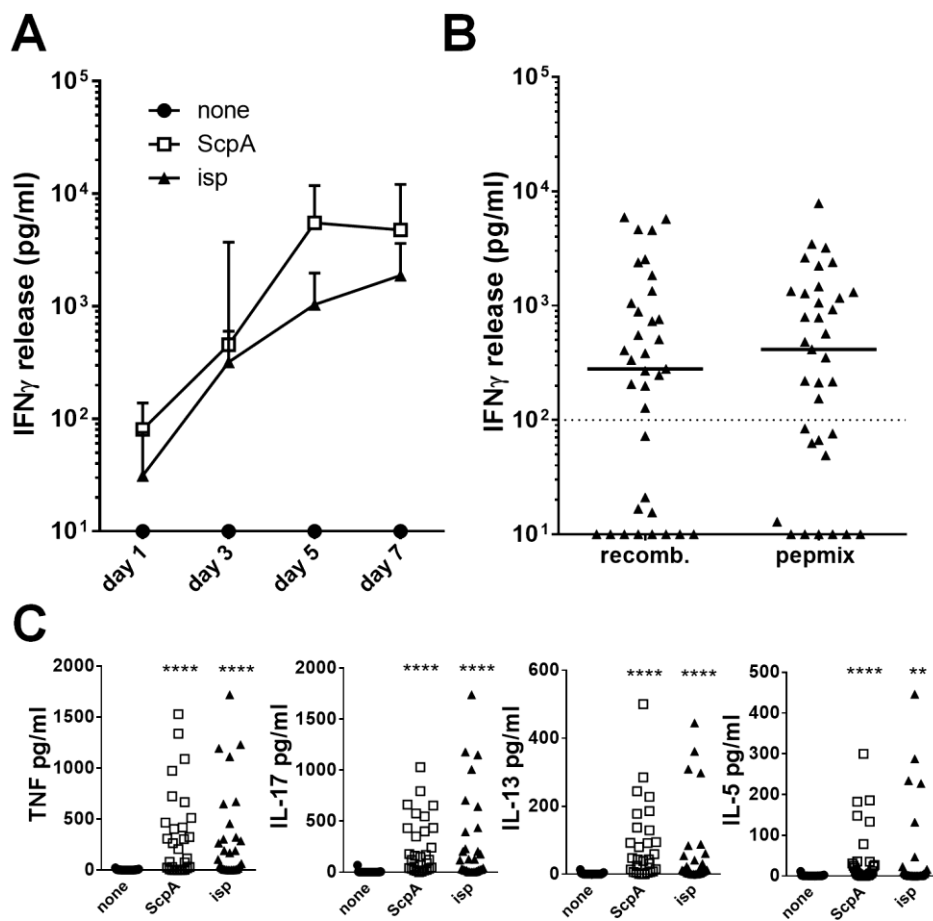


Figure S2. Cytokine responses in culture supernatants

(A) IFN γ measured by ELISA in culture supernatants of PBMCs stimulated with recombinant ScpA, Isp or medium at different timepoints (n=5). Data points indicate medians with interquartile range. (B) Comparison of the IFN γ release at day 7 after stimulation with isp either as a recombinant protein or as a mixture of overlapping 20-mer peptides (n=35). Stipulated line indicates the responder cutoff set at 100pg/ml. (C) Individual cytokines measured by multiplex cytokine analysis at day 7 (n=29). **p<0.01 and ****p<0.0001 was calculated with Friedman multiple comparison test followed by a Dunn's post test.

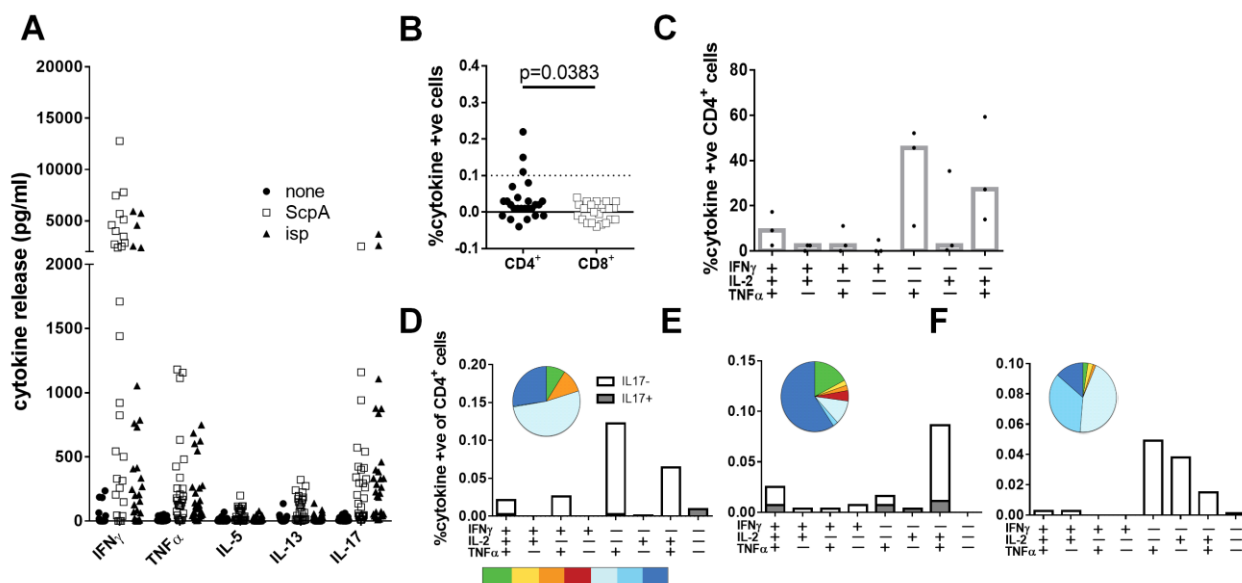


Figure S3. T cell response in children

(A) Cytokines measured by multiplex cytokine analysis in children (n=30). (B) Quantification of antigen specific CD4 and CD8 T cells expressing any combination of IFN γ , TNF α , IL-2 and IL-17 measured by flow cytometry in children. p value was calculated with a Wilcoxon test. Dotted line indicates cutoff of 0.1% cytokine +ve cells for cytokine co-expression analysis of a donor. (C) Grouped cytokine expression analysis of three children (all aged 13-15 years) with >0.1% cytokine +ve cells setting the total cytokine response for each donor to 100 (summed over IL-17 expression). Bars indicate medians. (D-F) Individual cytokine co-expression analysis of the three children divided into IL-17+ and IL-17- populations. Pie charts indicate the relative proportion of different cell populations (summed over IL-17) whereas bar plots indicate actual frequencies .

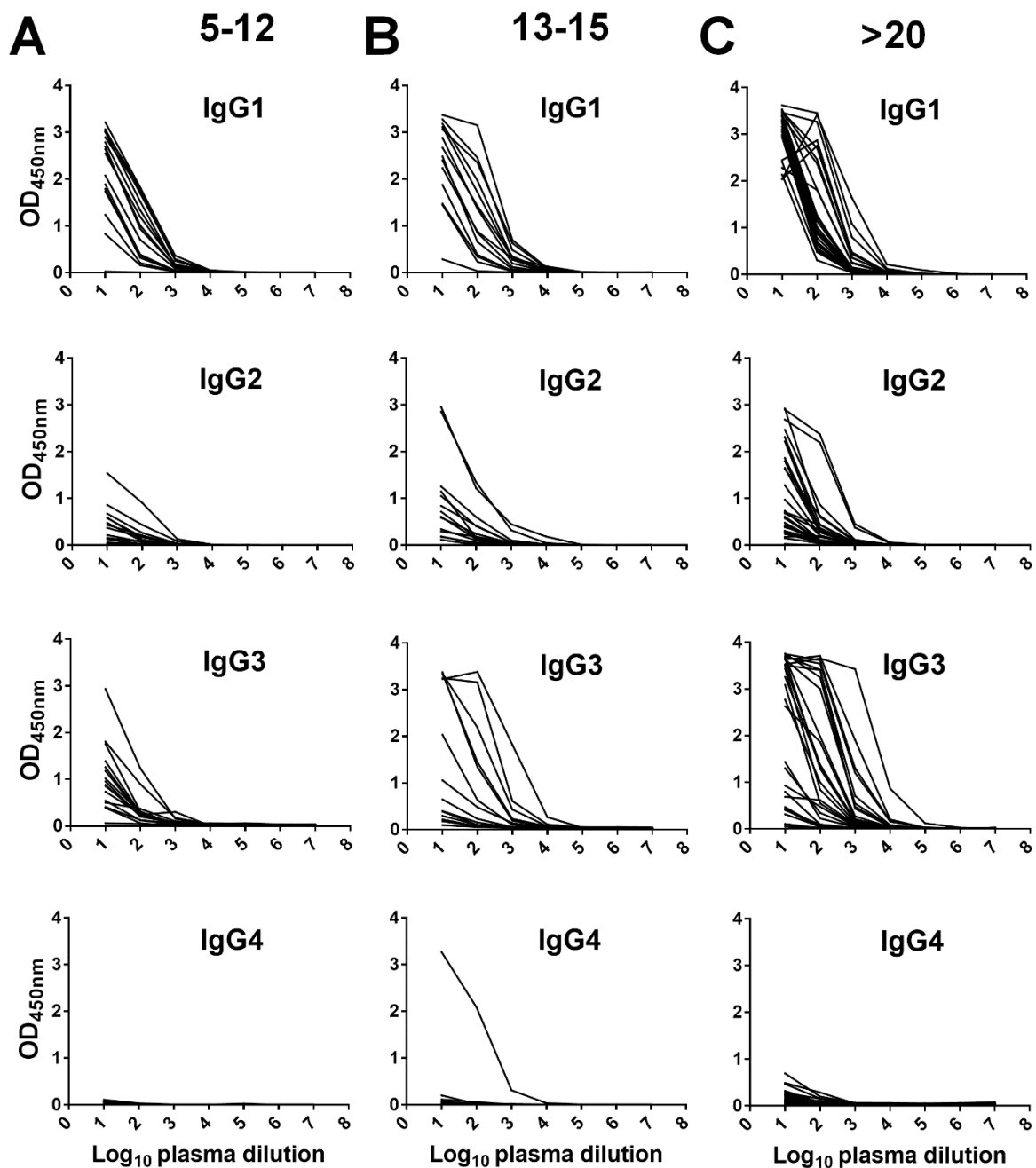


Figure S4. Raw data for IgG subclass responses in children and adults
 Anti-ScpA binding IgG subclass profiles for children between 5-12 years (n=16) (A), 13-15 years (n=14) (B), and adults >20 years (n=29) (C) that were included for comparison (also shown in Figure 1).