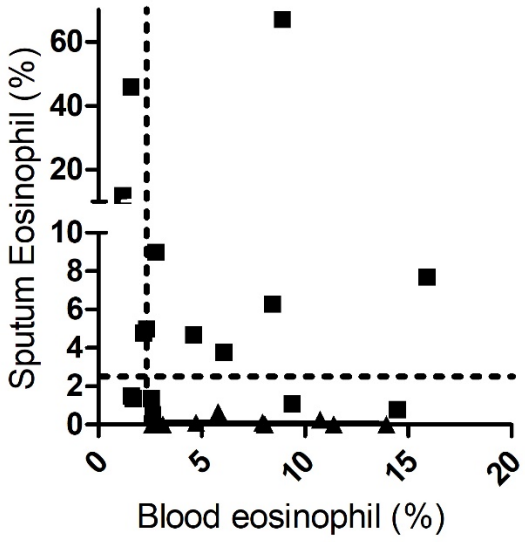
Supplementary figure 1. No relationship between blood and sputum eosinophils in STRA or DA. The percentage of sputum eosinophils (y-axis) was correlated with the percentage of blood eosinophils (x-axis) in children with severe therapy resistant asthma (STRA) – squares and children with difficult asthma (DA) – triangles. There was no significant relationship in either group. Dotted lines represent normal value cut-offs.

Supplementary figure 2. Sputum cells isolated from STRA patients were stained for extracellular markers that distinguish ILC and T cells. a) Plot shows forward/side scatter and identified lymphoid population. Identification of viable and $CD45^+$ cells that were lineage negative (Lin^- (CD14, CD16, CD19, CD20, CD56, CD4)) and $CD3^-$ and evaluated for extracellular markers CRTH2 and CD127 and intracellular cytokines IL-13 and IL-4. **b)** shows live lymphocytes that were gated for $CD3^+CD8^+$ versus $CD3^+CD4^+$ T cell subsets and intracellular cytokines IL-4 and IFN-γ were evaluated in $CD3^+CD4^+$ T cells

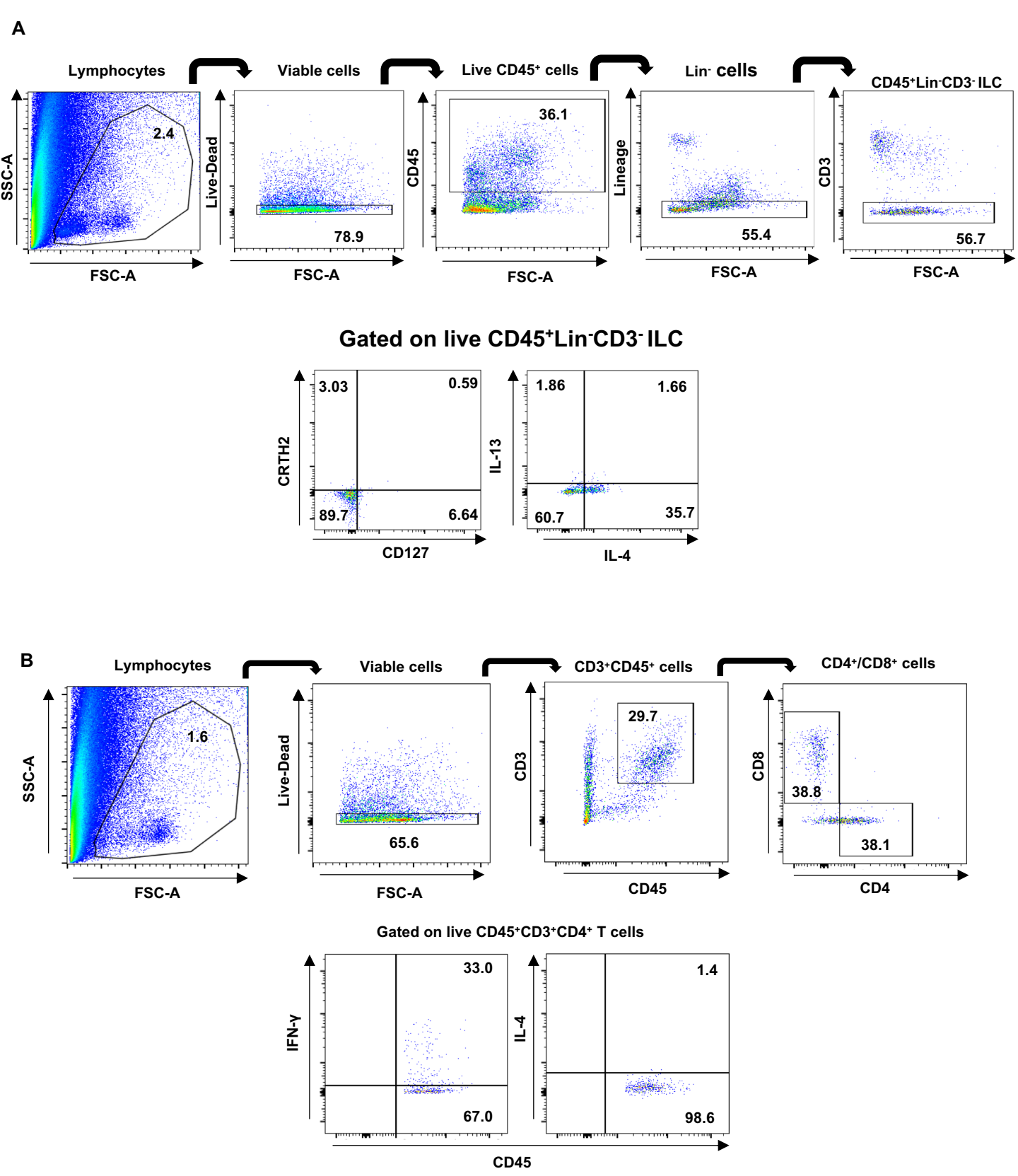
Supplementary figure 3. Levels of IL-4, IL-5 and IL-13 in sputum supernatants measured by multi-plex assay (MSD).

Supplementary figure 4. PBMC ILC2s and Th2 cells similar in STRA and DA. . **b)** frequency of $CRTH2^+$ ILCs ($Lin^{neg}CD45^+$) and $CD4^+$ T cells ($CD45^+CD3^+$) in PBMCs from children with severe therapy-resistant asthma (STRA), difficult asthma (DA) and with recurrent lower respiratory tract infections (CI). **c)** Frequency of $IL\text{-}13^+$ in ILCs and $CD4^+$ T cells. **d)** Frequency of $IL\text{-}17^+$ ILCs and $CD4^+$ T cells. Kruskall-Wallis test with a Dunns post test, followed by Mann Whitney test between indicated pairs of groups, *P <0.05, and **P < 0.01. STRA n =≥11, DA n=≥4 and CI n =≥6.

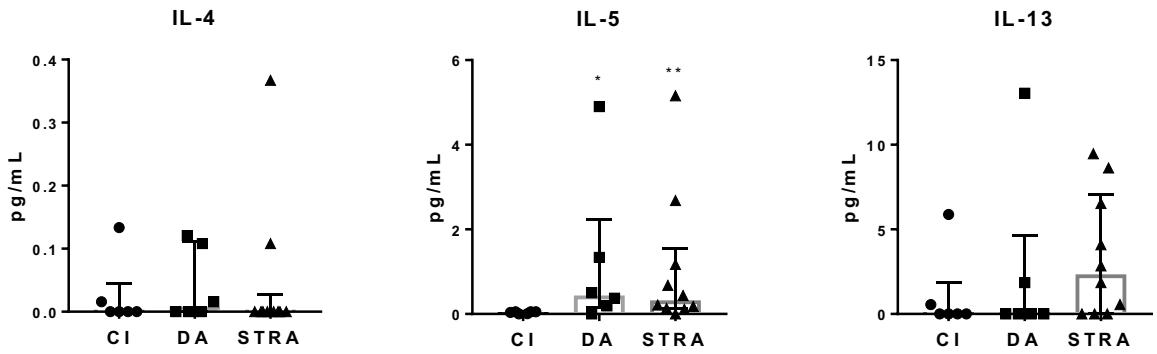
Supplementary figure 5. Extracellular markers on $IL\text{-}17^+$ ILCs. Pie chart shows frequencies of $IL\text{-}17^+$ ILCs ($Lin^{neg}CD45^+$) expressing CRTH2 and CD127 in in sputum from STRA patients. n=12.



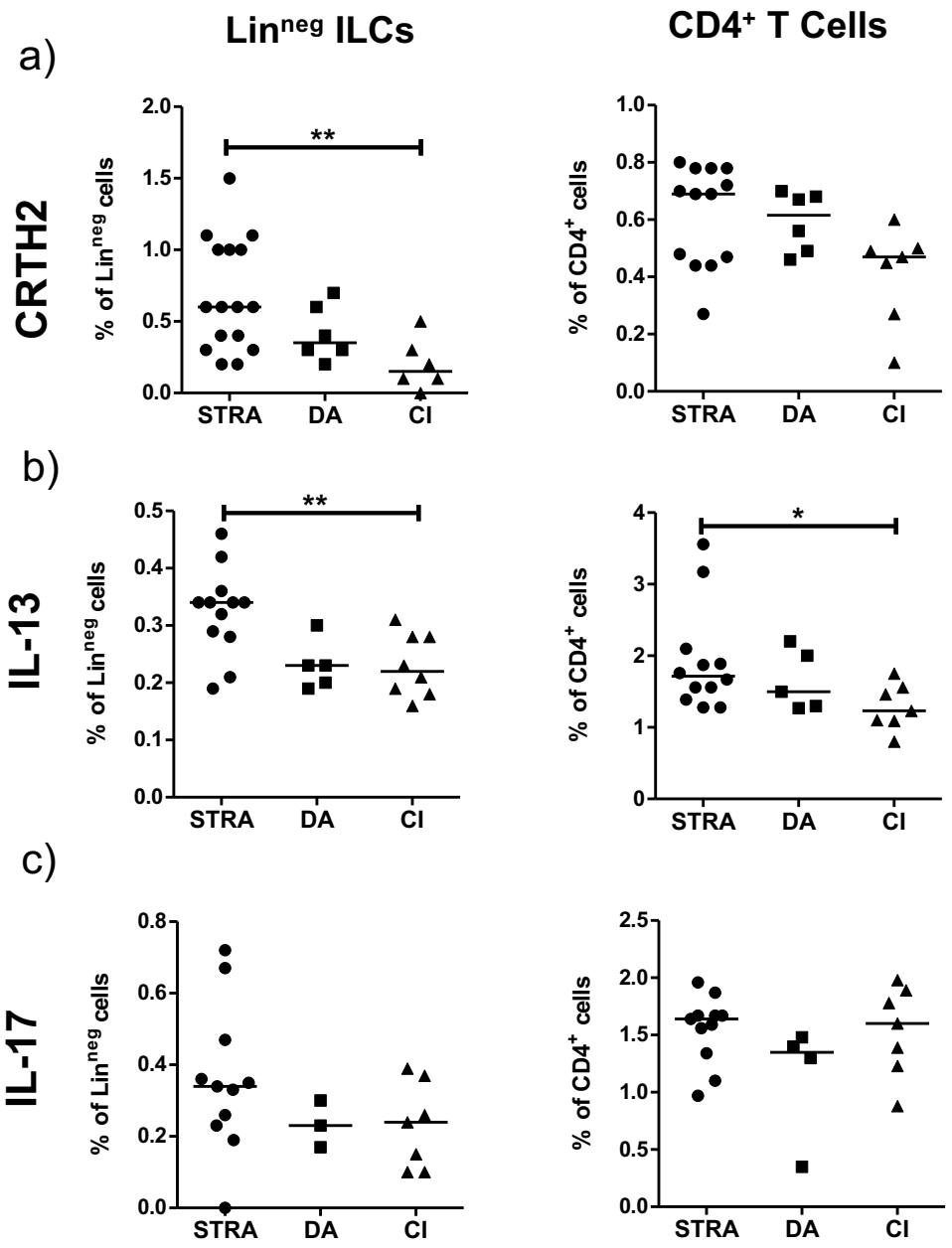
Supplementary figure 1. No relationship between blood and sputum eosinophils in children with severe therapy resistant asthma (squares), or difficult asthma (triangles).



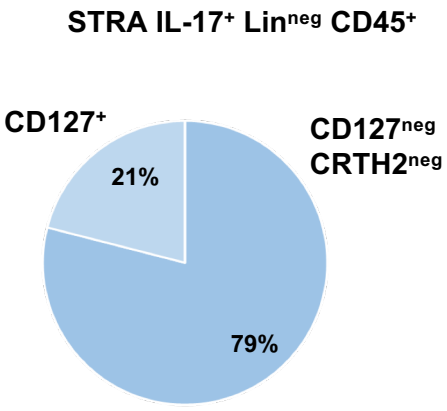
Supplementary figure 2. Gating strategy for sputum ILC (A) and T cells (B)



Supplementary figure 3. Levels of IL-4, IL-5 and IL-13 in sputum supernatants in CI, STRA and DA



Supplementary figure 4. PBMC type 2 ILCs and T cells similar in STRA and DA



Supplementary figure 5. Extracellular markers on IL-17^{+} ILCs.