**Additional file 3**

**Gating strategy**

Gating strategy to identify T helper cell populations from flow cytometry analysis. A gate was set to isolate the lymphocyte population by measuring forward scatter (FSC) on the X axis (size) and side scatter (SSC) on the Y axis (granularity). To define T lymphocytes, a gate was set for CD3+CD4+ cells. The lymphocyte gate was also used to define CD3+CD4+ T helper (Th) cells. a) Naïve (CD45RA+) and memory (CD45RA-) Th cells were defined by their expression of CD45RA. b) To define Th1 and Th2 cells, the populations were gated on expression of the intracellularly expressed Th cell lineage markers, T-box expressed in T cells (Tbet), a transcription factor expressed by Th1, and GATA binding protein 3 (GATA3), a key transcription factor in Th2 cells. Cells in the naïve population were not expected to express the markers, and a gate was set in that population (maximum 1% and minimum 0.6% cells positive for the markers). In the memory population (c) The gate from the naïve population was used to define cells expressing Tbet and GATA3. d) and e) A similar strategy was used to define Th17 cells as RORC+ CD45RA- cells. f) T regulatory cells were defined as CD4dimCD25hiFoxp3+ cells. g) In addition, two T regulatory subpopulations were isolated from the CD3+CD4+ Th cell population, depending on their expression of the transcription factor forkhead box P3 (FoxP3) and CD45RA. CD3+CD4+CD45RA+/-Foxp3+/++, *i.e.* resting and activated Tregs, respectively