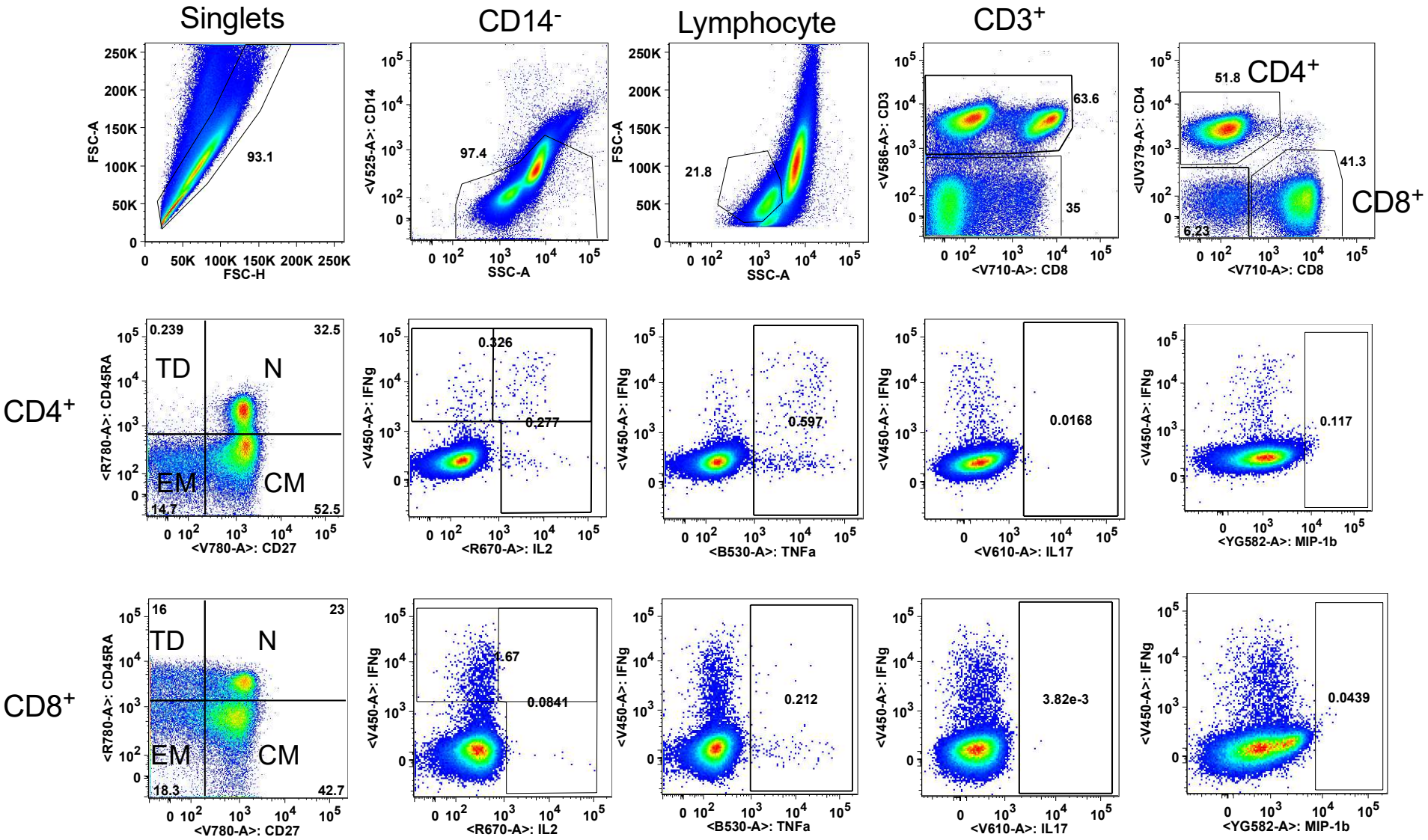
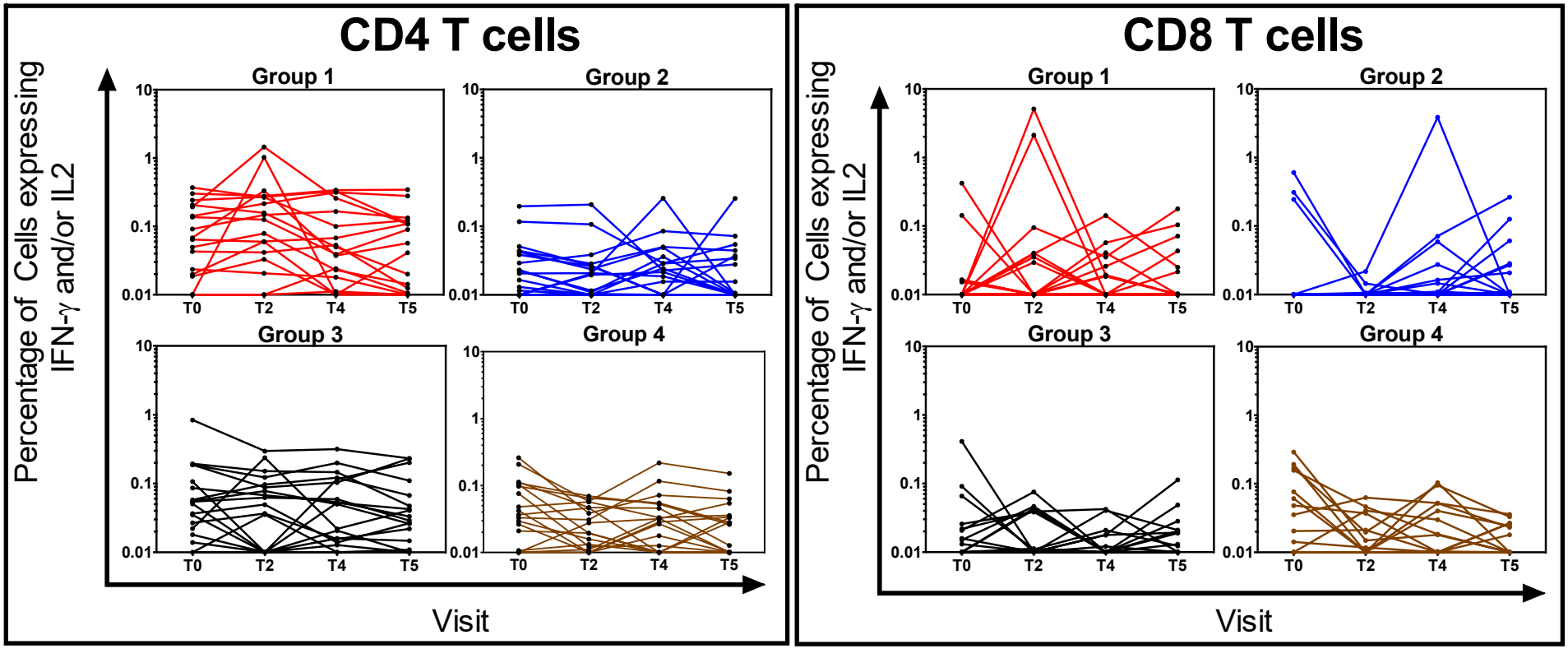
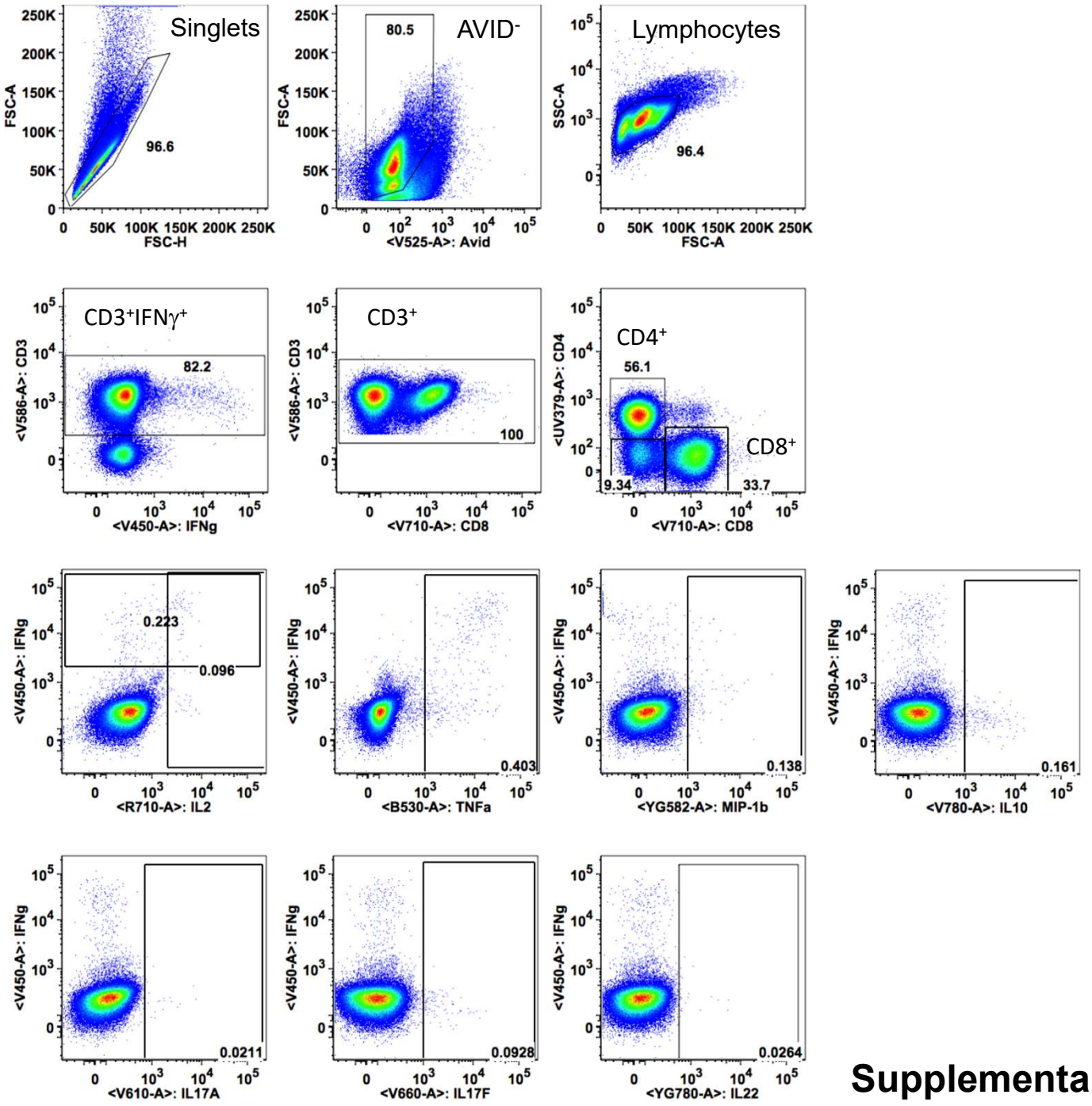


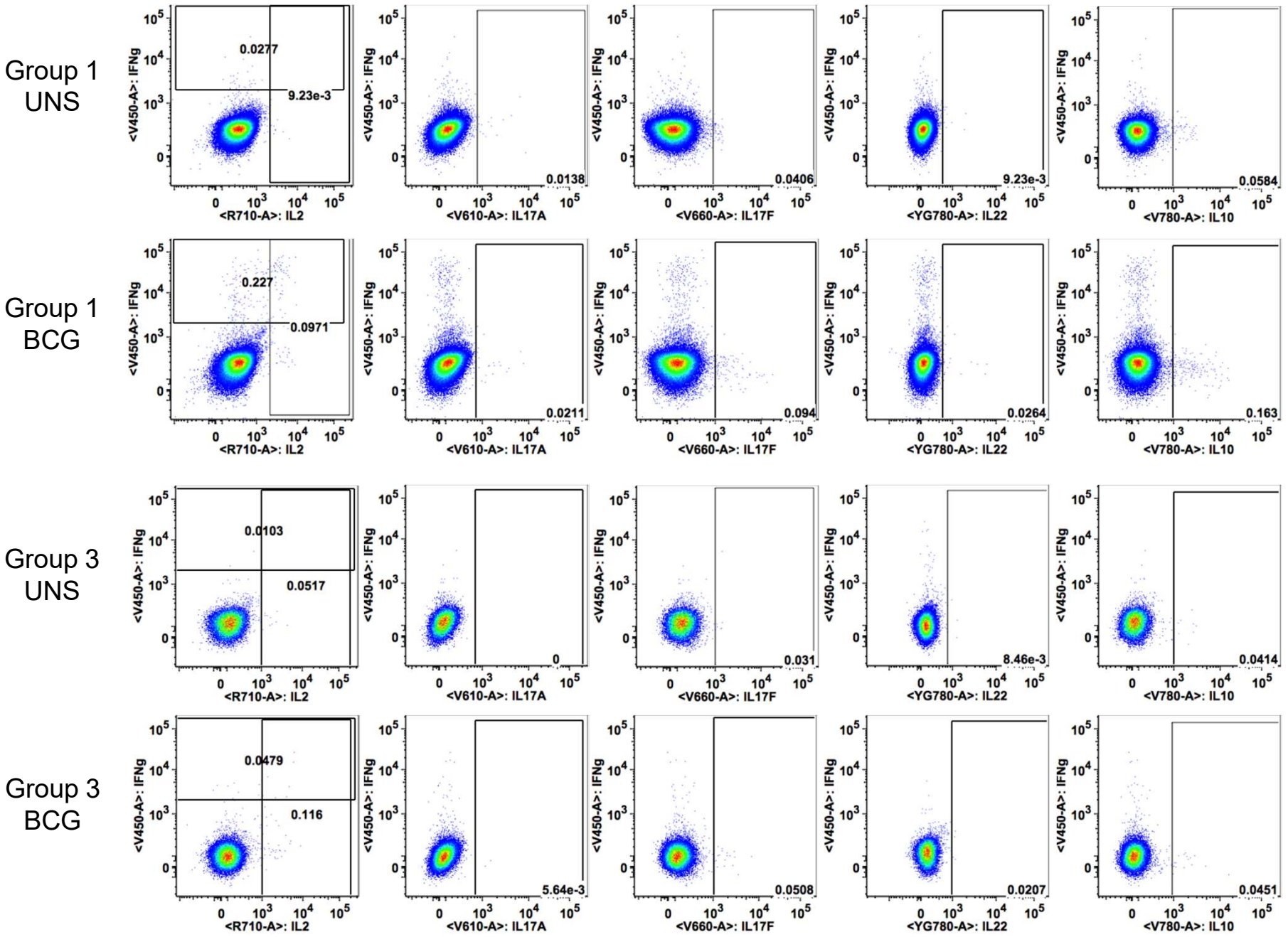
Supplementary Figure 1



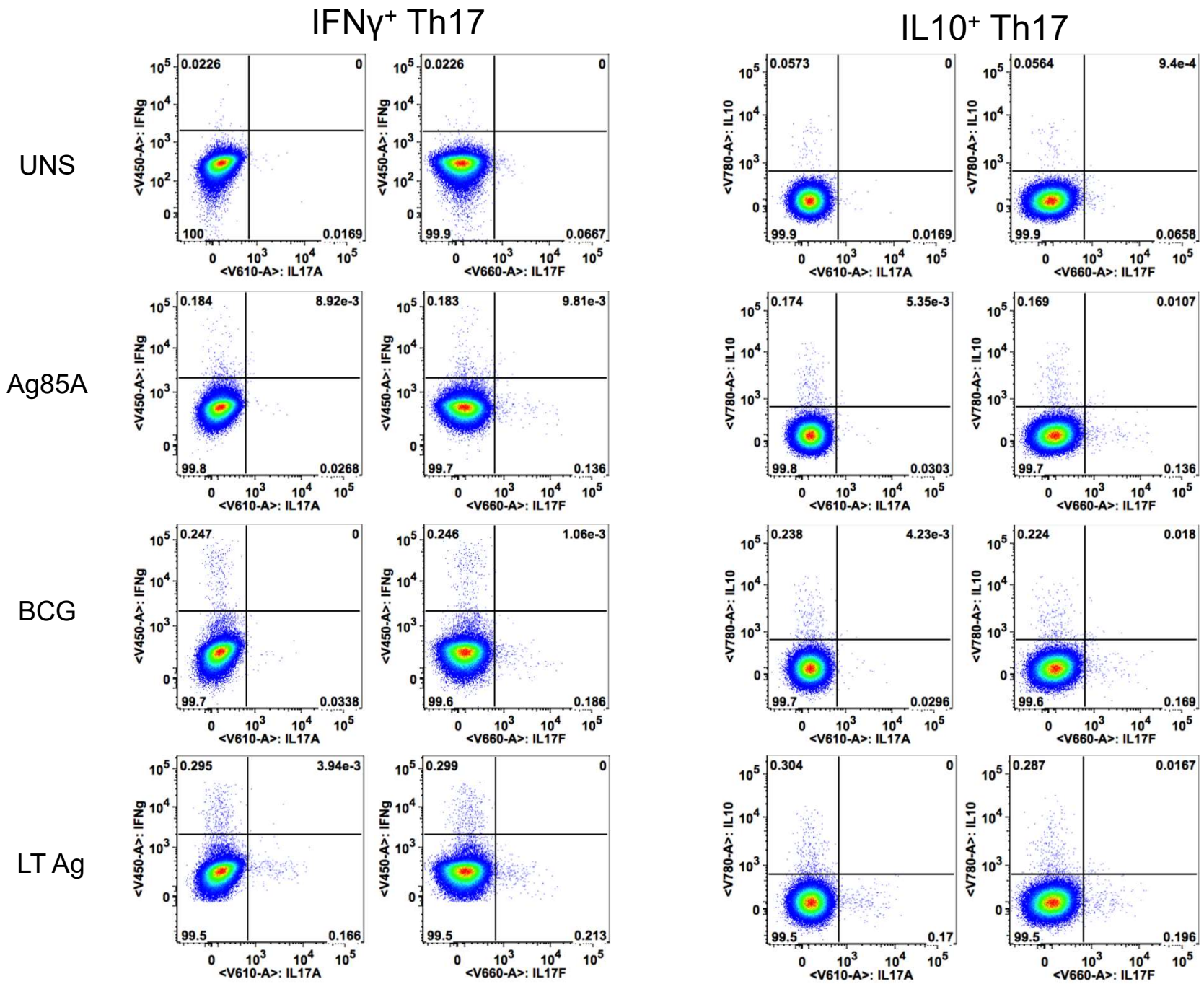
Supplementary Figure 2



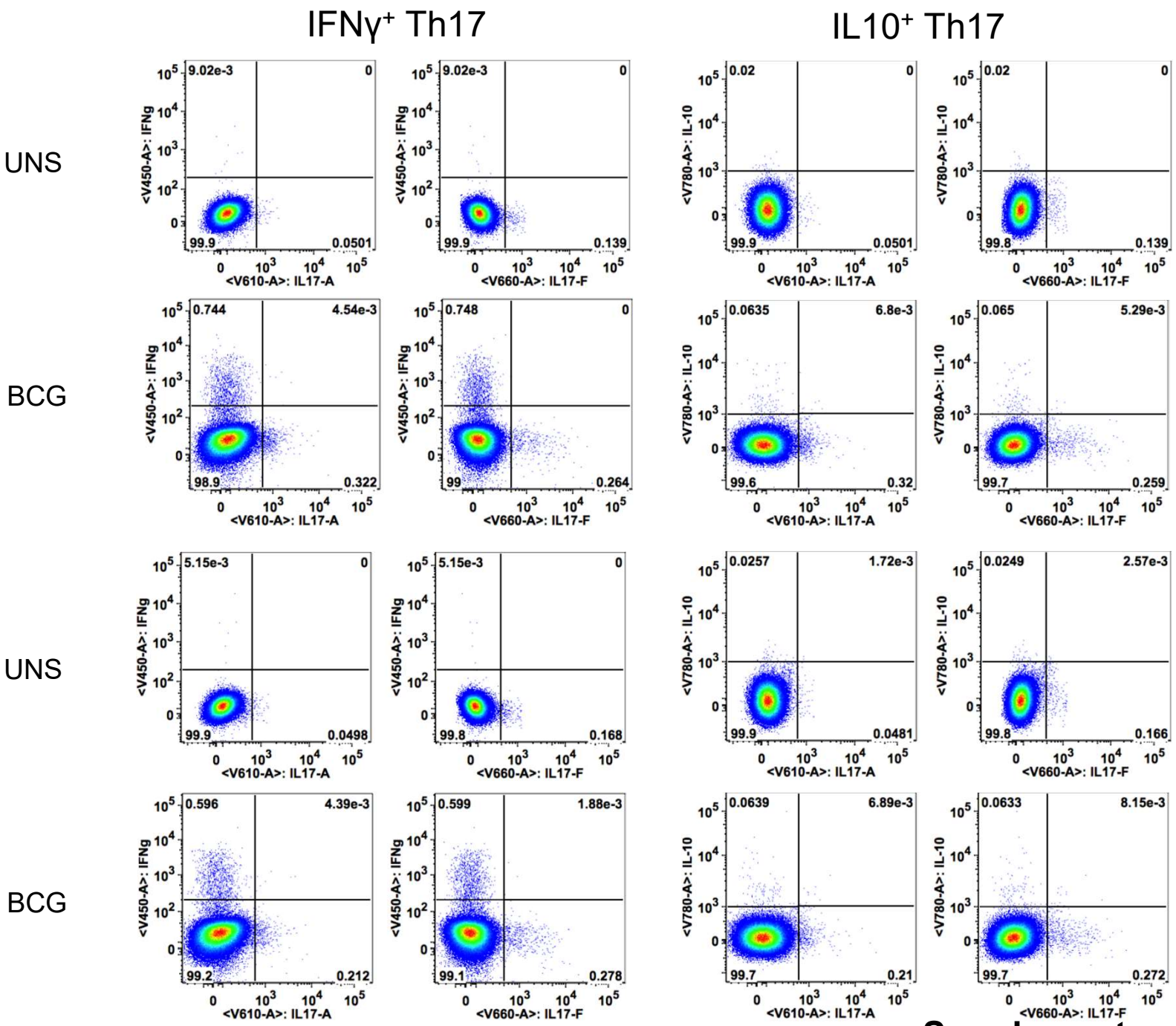
Supplementary Figure 3



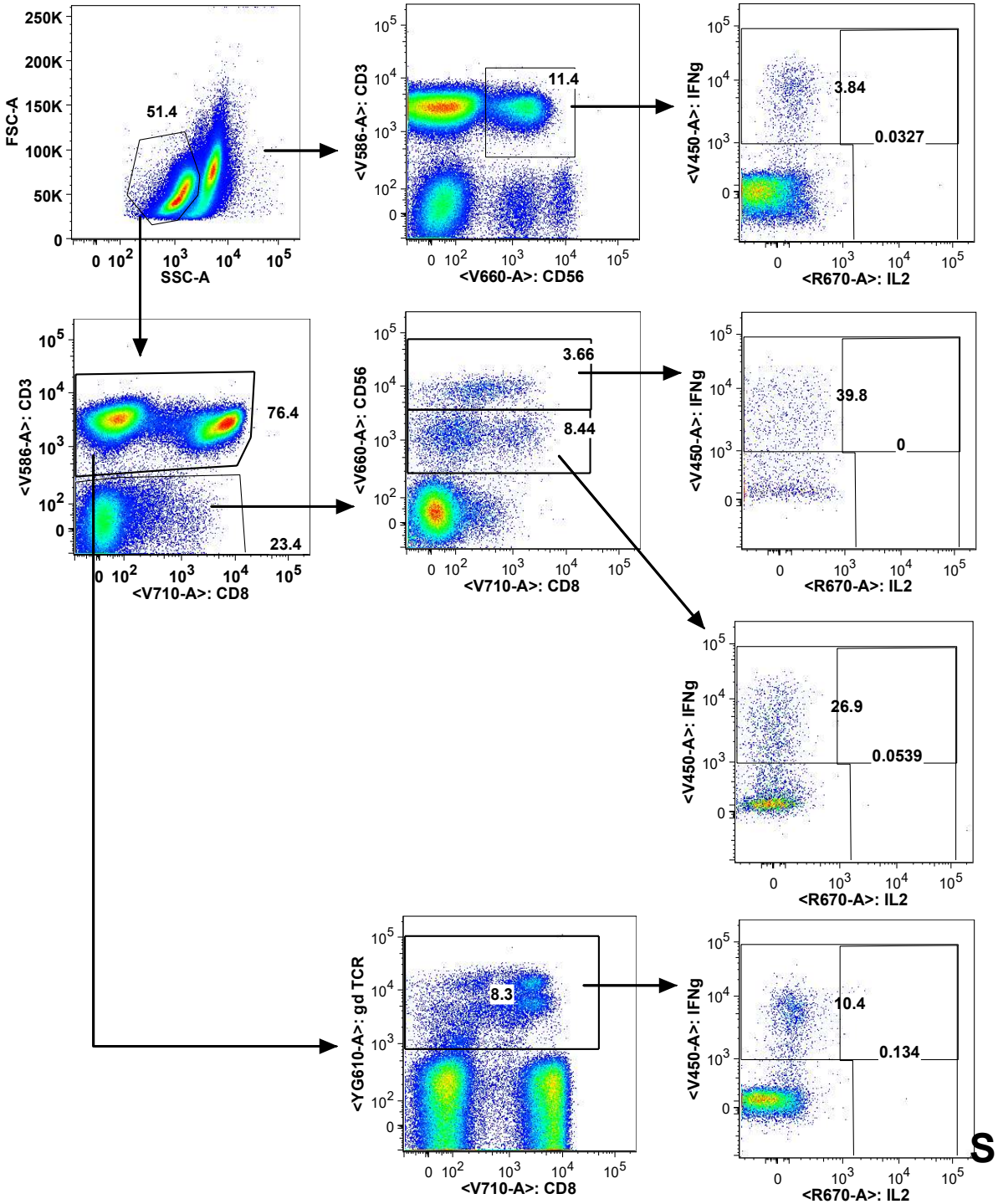
Supplementary Figure 4



Supplementary Figure 5



Supplementary Figure 6



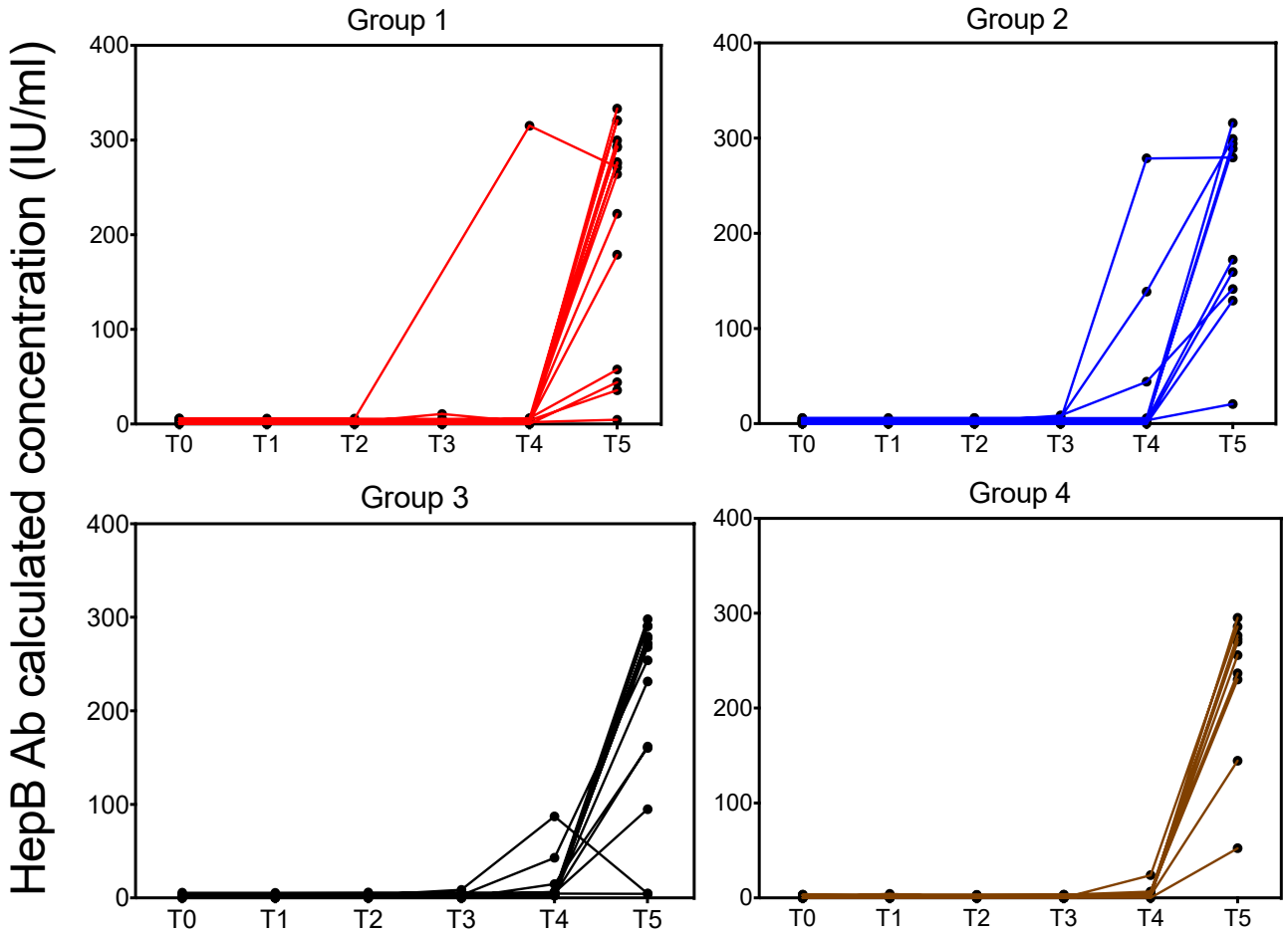
NKT cells

CD56^{bright} NK cells

CD56^{dim} NK cells

γδ T cells

Supplementary Figure 7



Supplementary Figure 8

Supplementary Table 1: ICS Antibody Panels

Table 1A: Whole blood ICS panel

Sl.No.	Antibody	Clone	Channel	Company	Cat. No.
1	CD3 BV570*	UCHT1	V-586	BioLegend	300436
2	CD4 BUV395*	SK3	UV-379	BD	563550
3	CD8 BV711*	RPA-T8	V-710	BD	563677
4	IFNγ V450*	B27	V-450	BD	560371
5	TNFα FITC*	MAb11	B-530	BioLegend	502906
6	IL-2 APC*	MQ1-17H12	R-670	BD	561054
7	IL-17A BV605*	BL 168	V-610	BioLegend	512326
8	MIP-1β PE*	D21-1351	YG-582	BD	561120
9	CD45RA APC-H7	HI100	R-780	BD	560674
10	CD56 BV650	HCD56	V-660	BioLegend	318344
11	CD27 BV785	O323	V-780	BioLegend	302832
12	γδTCR PE-CF594	B1	YG-610	BD	562511
13	CD14 BV510	M5E2	V525	BioLegend	301842

*Intracellular

Table 1B: PBMC ICS panel

Sl.No.	Antibody	Clone	Channel	Company	Cat. No.
1	CD3 BV570*	UCHT1	V-586	BioLegend	300436
2	CD4 BUV395*	SK3	UV-379	BD	563550
3	CD8 BV711*	RPA-T8	V-710	BD	563677
4	IFNγ V450*	B27	V-450	BD	560371
5	TNFα FITC*	MAb11	B-530	BioLegend	502906
6	IL-2 Alexa 700*	MQ1-17H12	R-710	BioLegend	500320
7	IL-17A BV605*	BL 168	V-610	BioLegend	512326
8	MIP-1β PE*	D21-1351	YG-582	BD	561120
9	CD45RA APC-H7	HI100	R-780	BD	560674
10	IL-17F BV650*	O33-782	V-660	BD	564264
11	IL-10 BV786*	JES3-9D7	V-780	BD	564049
12	IL-22 PE-Cy7*	22URTI	YG-780	Thermo Fisher	25-7229-42
13	CCR7 Alexa Fluor 647	G043H7	R-670	BioLegend	353218
14	Avid	NA	V-525	Thermo Fisher	L34966

SUPPLEMENTAL FIGURE LEGENDS

Supplemental Figure 1: Flow cytometry gating strategy for T-cell analysis in whole blood. Schematic representation of flow cytometry plots showing sequential gating strategy of whole blood cells for analysis of $CD4^+$ and $CD8^+$ T-cells. All gates for non-functional markers were defined using fluorescence minus one (FMO) controls; gates for functional markers were defined using the unstimulated samples. Initial gating was done on FSC-H and FSC-A to discriminate singlets, followed by the exclusion of $CD14^+$ monocytes. Lymphocytes were gated using FSC-A and SSC-A. Within the lymphocyte gate, $CD3^+$ cells were identified, followed by $CD4^+$ and $CD8^+$ T-cells. CD27 and CD45RA expression within $CD4^+$ and $CD8^+$ T-cell subsets was used to define memory phenotypes (naïve, CM, EM and TD). To define functional markers for $CD4^+$ and $CD8^+$ T-cells, a gate was applied for each cytokine, not taking into account the co-expression of other markers. Boolean gates were then created based on these gates to identify cells expressing different combinations of markers.

Supplemental Figure 2: TB10.4-specific $CD4^+$ and $CD8^+$ T-cell responses in whole blood before and after BCG revaccination. Line graphs show changes in TB10.4 specific IFN-γ and/or IL-2 frequencies of $CD4^+$ and $CD8^+$ T-cells over time in BCG vaccinated $IGRA^+$ (Group 1, N=19) and $IGRA^-$ (Group 2, N=18) subjects versus unvaccinated control $IGRA^+$ (Group 3, N=18) and $IGRA^-$ (Group 4, N=18) subjects.

Supplemental Figure 3: Flow cytometry gating strategy for T-cell analysis in PBMC. Schematic representation of flow cytometry plots showing sequential gating strategy of PBMCs for analysis of $CD4^+$ and $CD8^+$ T-cells. All gates for non-functional markers were defined using fluorescence minus one (FMO) controls; gates for functional markers were defined using the unstimulated samples. Initial gating was done on FSC-H and FSC-A to discriminate singlets, followed by the exclusion of dead cells by AVID stain. Lymphocytes were gated using FSC-A and SSC-A. Within the lymphocyte gate, $CD3^+$ cells were identified, followed by $CD4^+$ and $CD8^+$ T-cells. To define functional markers for $CD4^+$ T-cells, a gate was applied for each cytokine, not taking into account the co-expression of other markers. Boolean

gates were then created based on these gates to identify cells expressing different combinations of markers.

Supplemental Figure 4: $CD4^+$ T-cell cytokine responses in PBMC to BCG stimulation. Representative flow cytometry plots (from same donors as shown in Figure 9) show total IFN-γ, IL-2, IL-17A, IL-17F, IL-22 and IL-10 cytokine positive $CD4^+$ T-cells in unstimulated control and after *in vitro* stimulation with BCG at T5 in Group 1 versus Group 3 subjects.

Supplemental Figure 5: Th17 subsets in PBMC to Mtb antigens and BCG stimulation. Representative flow cytometry plots (from same donors as shown in Figure 9) show $CD4^+$Th17 subsets expressing either IFN-γ or IL-10 with IL-17F with or without *in vitro* stimulation of PBMC with Ag85A, BCG, LTAg at T5 in a Group 1 subject. The quadrant gates for the cytokines were positioned closer to the negative cells for these analyses to examine the Th17 double-positive cells. Since those cells are rare and the MFI of the cytokines on those cells is low, the lower position of the quadrant was necessary to include those cells.

Supplemental Figure 6: Th17 subsets in PBMC to BCG stimulation. Representative flow cytometry plots show $CD4^+$Th17 subsets expressing either IFN-γ or IL-10 with IL-17F with or without *in vitro* stimulation of PBMC with BCG at T5 in two additional Group 1 subjects.

Supplemental Figure 7: Gating Strategy for Innate Cells. A representative sequential gating strategy for NKT, $CD56^{br}$ NK, $CD56^{dim}$ NK and γδ T-cells in whole blood is shown. Frequencies of IFN-γ expressing cells were studied in all populations.

Supplemental Figure 8: BCG revaccination did not impact Hep B antibody titer in study participants. Hep B antibody titer was measured in plasma of study participants at T0, T1, T2, T4 and T5. Antibody titer was measured by standard ELISA and concentration was expressed as IU/ml. N for Group 1 = 16, Group 2=10, Group 3=16 and Group 4=10. P values for longitudinal samples were calculated by comparing each time point to baseline using the Freidman test and corrected for multiple comparisons using Dunn's test.

Supplemental Table 1: Panel of antibodies used for cell surface and intracellular markers for (A) whole blood and (B) PBMC ICS assays.

Supplemental File 1: Clinical details of study participants who were included in final data analysis.