**Supplemental Table 1.** Antibodies used for confocal imaging.

A black background with a black square

Description automatically generated with medium confidence

**Supplemental Table 2.** Mann-Whitney test generated p values were corrected using FDR correction with q=0.05.

A black and white grid

Description automatically generated

A collage of images of blue and green cells

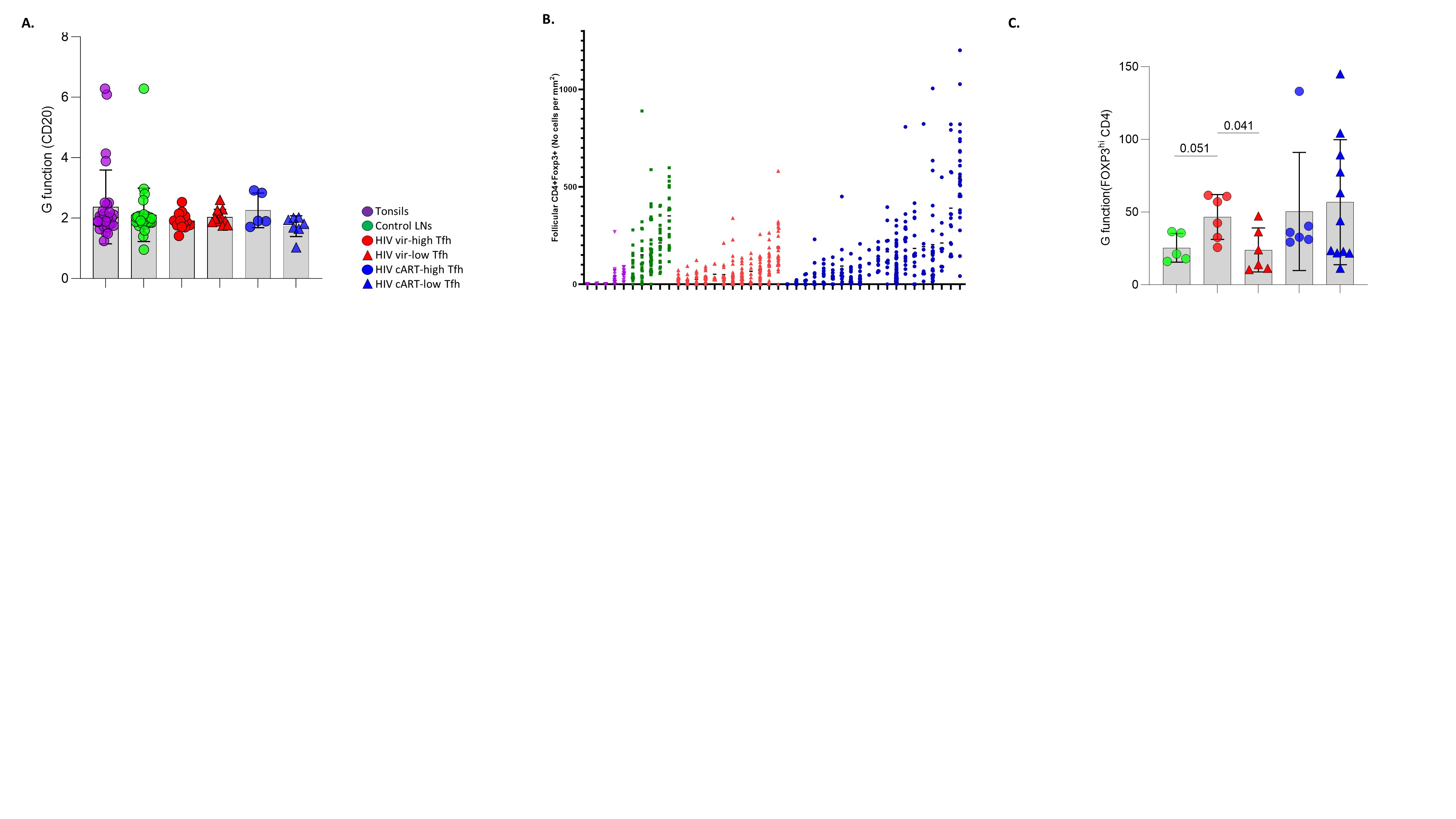
Description automatically generated

**Supplemental Figure 1. (A)** Representative whole-tissue examples of CD20 (red), PD1 (green) and DAPI (blue) staining pattern from control tonsils, control LNs, vir HIV LNs and cART HIV LNs (scale bar: 300 μm). **(B)** Representative examples of CD20 (red), CD4 (green), DAPI (blue), CD57 (grey) and PD1 (cyan) staining pattern from a cART HIV LN (scale bar: 30 μm). The white line denotes the follicular area.

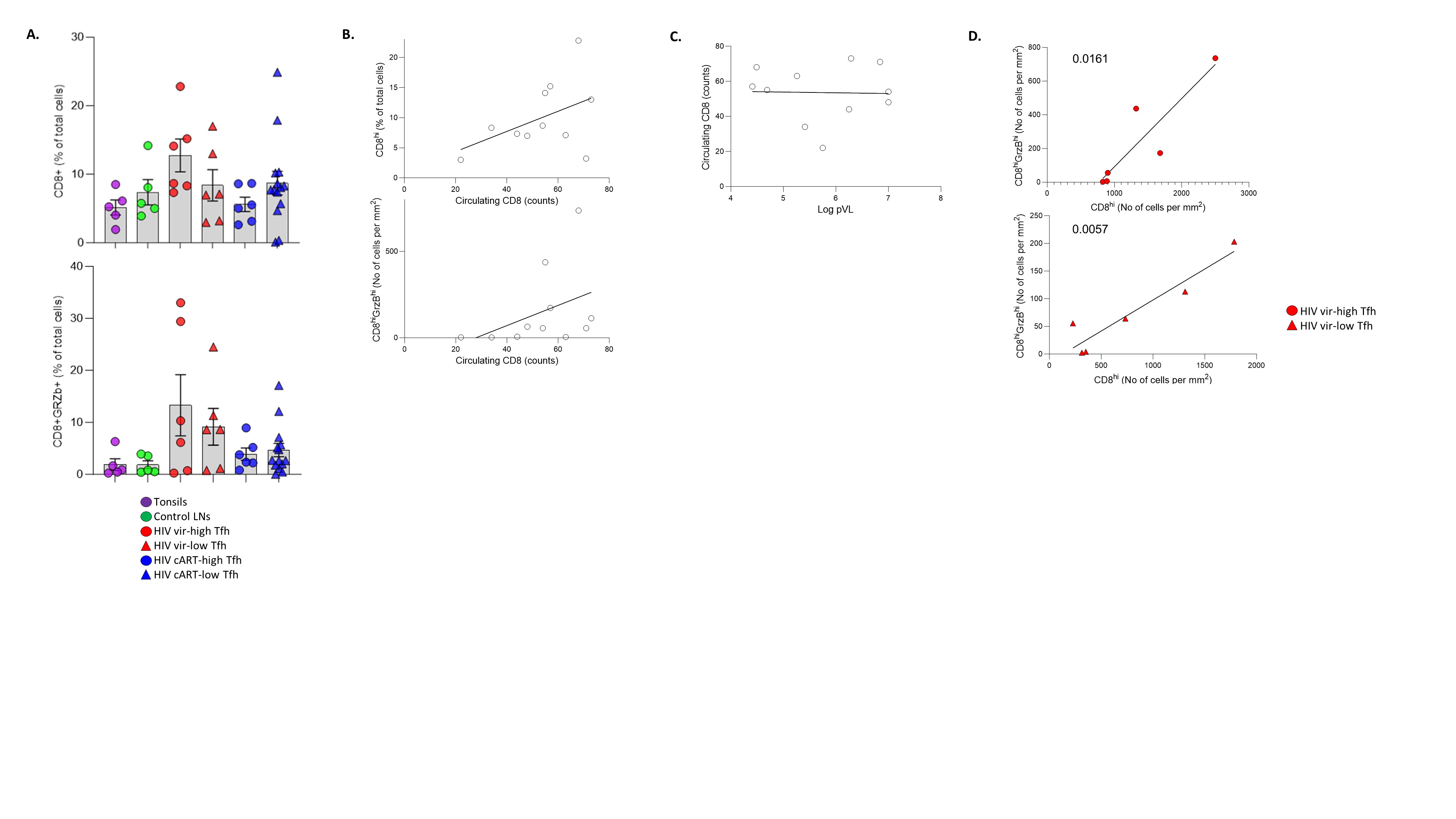
A close-up of a graph

Description automatically generated

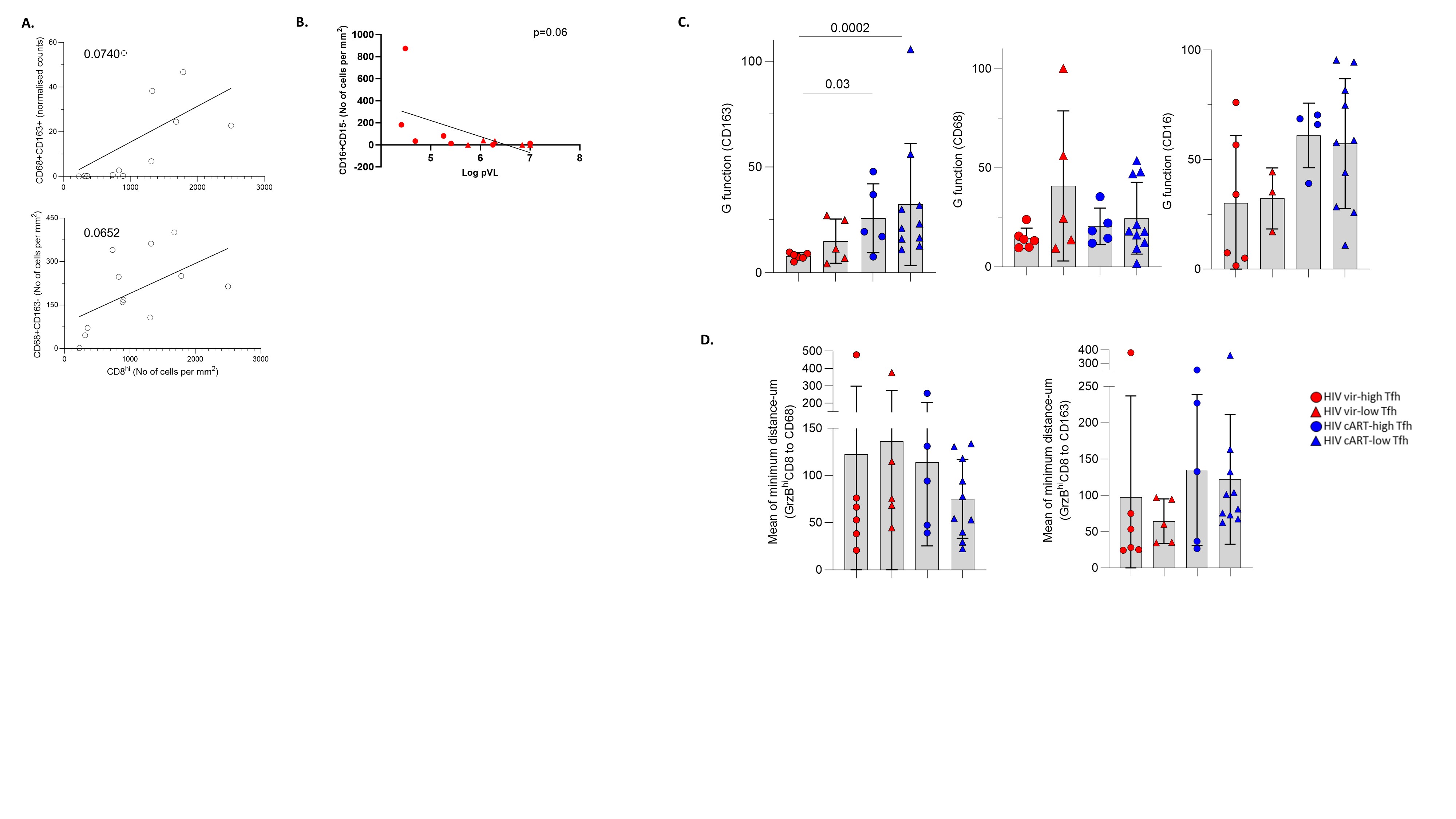
**Supplemental Figure 2. (A)** Immunophenotyping gating strategy used for the identification of TFH cells in lymphoid and tonsillar tissues of interest based on the expression of PD1 and CD57, by Histocytometry. The extrafollicular expression level was used for setting the gates identifying PD1 and CD57 subsets. An example from one LN and one tonsil are shown. **(B)** Dot plot graph showing the normalized numbers of PD1hiCD57hi TFH cells in all groups. Each symbol represents a follicular area.



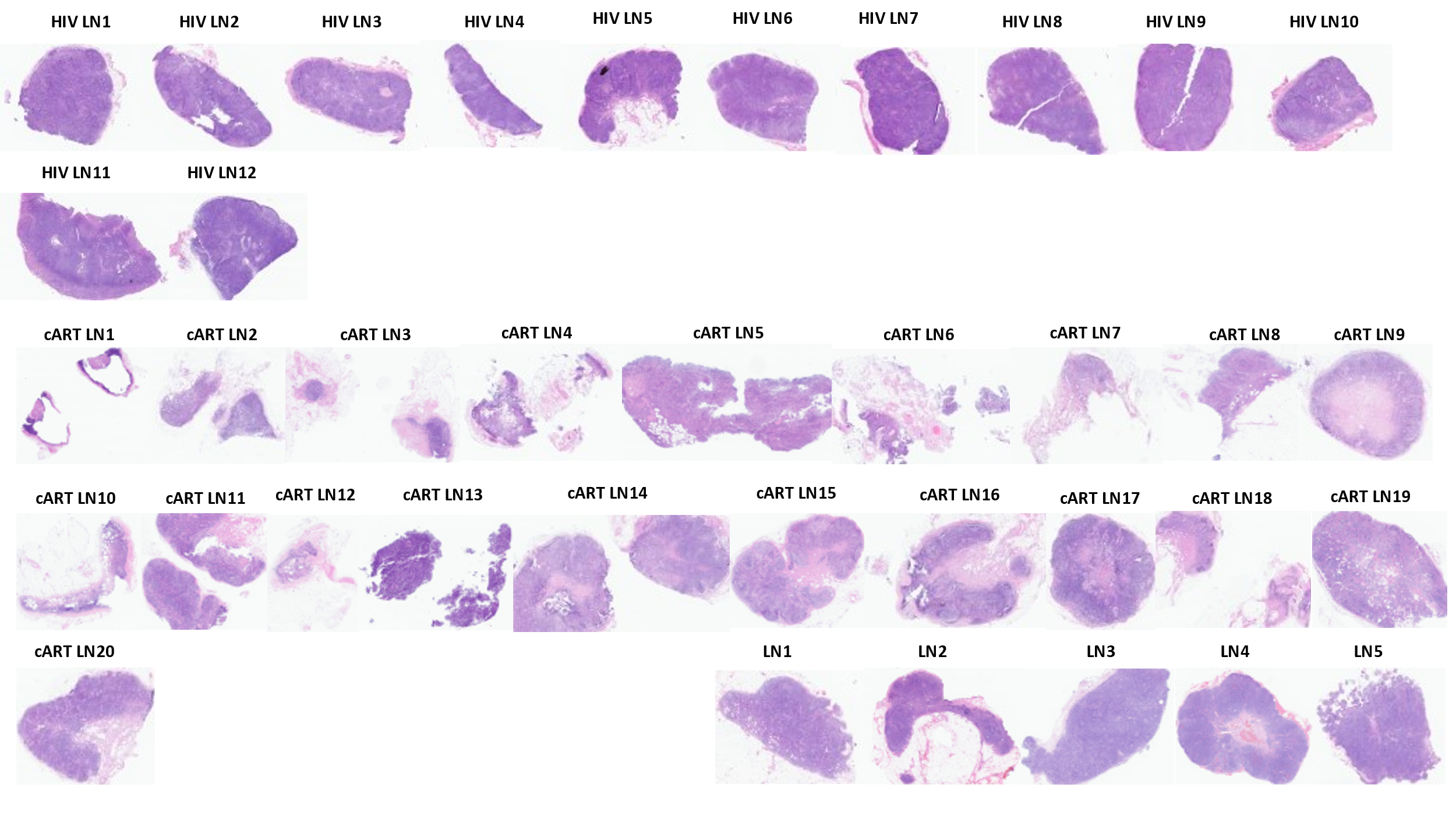
**Supplemental Figure 3. (A)**Bar graph showing the G function values for CD20hi B cells, in all groups of tissues control tonsils (N=29), control LNs (N=29), HIV vir-high TFH (N=13), HIV vir-low TFH (N=5), HIV cART-high TFH (N=11) and HIV cART-low TFH (N=7)). **(B)** Dot graph showing the distribution of normalized FOXP3hi CD4+ cell counts in tonsils, control LNs, vir HIV LNs and cART HIV LNs. Each symbol represents a follicle. **(C)** Bar graph showing the G function values for total FOXP3hi CD4+ T cells in control and HIV infected LNs (control LNs (N=5), HIV vir-high TFH (N=6), HIV vir-low TFH (N=6), HIV cART-high TFH (N=6) and HIV cART-low TFH (N=11)). Each symbol represents a donor.



**Supplemental Figure 4. (A)** Bar graphs demonstrating the frequency of bulk CD8+ (upper panel) and GrzBhi CD8+ (lower panel) cells in control tonsils (N=5), control LNs (N=5), HIV vir-high TFH (N=6), HIV vir-low TFH (N=6), HIV cART-high TFH (N=6) and HIV cART-low TFH (N=14).Each symbol represents a different donor.**(B)** Linear regression analysis between circulating CD8+ T cells and LN bulk or GrzBhi CD8+ T cells in viremic PLWH. (**C)** Linear regression analysis between blood viral loads and counts of circulating CD8+ T cells in viremic PLWH. (**D)** Linear regression analysis between LN bulk and GrzBhi CD8+ T cells in HIV viremic high- and low-TFH subgroups.



**Supplemental Figure 5. (A)** Linear regression analysis to show the correlation between LN CD68hiCD163hi (upper panel) or CD68hiCD163lo (lower panel) cells and LN CD8+ cells in HIV vir LNs. **(B)** Linear regression analysis to show the correlation between LN CD16hiCD15lo and blood viral load in viremic PLWH. **(C)** Bar graphs showing the calculated G function values for CD163hi (HIV vir-high TFH (N=6), HIV vir-low TFH (N=5), HIV cART-high TFH (N=5) and HIV cART-low TFH (N=10)), CD68hi (HIV vir-high TFH (N=6), HIV vir-low TFH (N=5), HIV cART-high TFH (N=5) and HIV cART-low TFH (N=10)) and CD16hi (HIV vir-high TFH (N=6), HIV vir-low TFH (N=3), HIV cART-high TFH (N=4) and HIV cART-low TFH (N=10)) LN cells in HIV subgroups. **(D)** Bar graphs showing the mean values of the minimum distances between GrzBhiCD8+ T cells and CD68hi (left panel) or CD163hi (right panel) cells in the HIV subgroups (HIV vir-high TFH (N=6), HIV vir-low TFH (N=5), HIV cART-high TFH (N=5) and HIV cART-low TFH (N=10)). Each symbol represents a different donor.



**Supplemental Figure 6.** Hematoxylin and eosin (H&E) staining for all the LN tissues used in this study (scale bar: 1,5mm).