

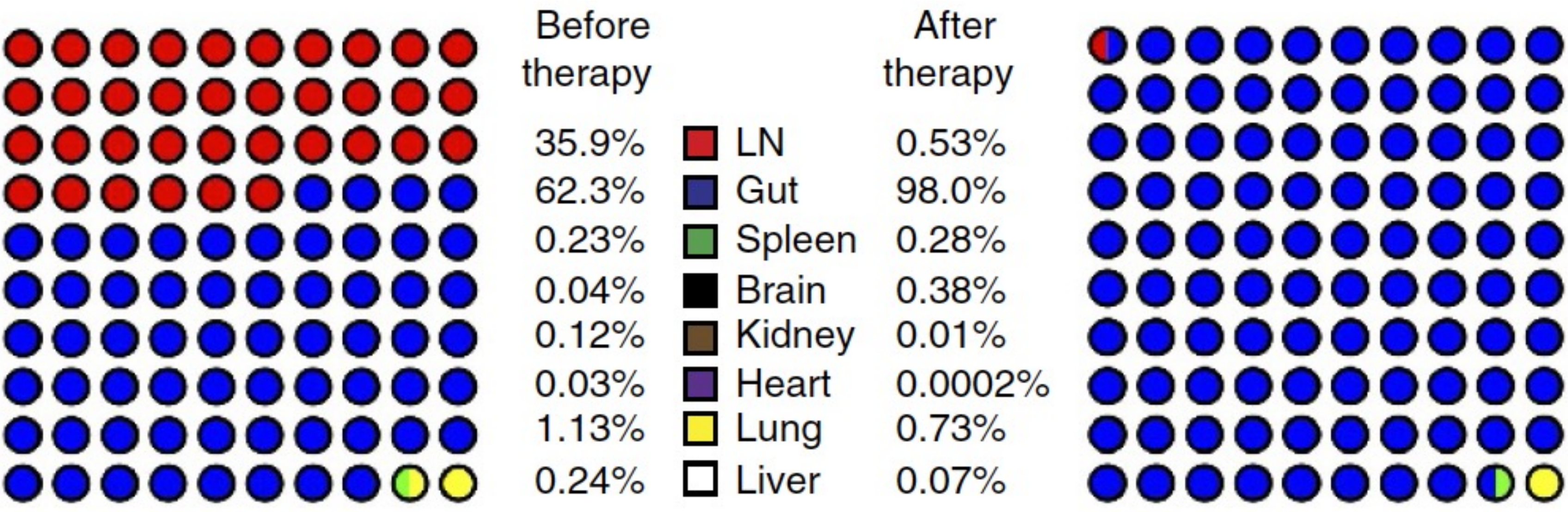
Characterization of Antiviral T cells in HIV infection

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HIV reservoir and most infected cells are located primarily in the gut

This study aims to characterize antiviral T cells and investigate the persistent HIV reservoir in the gut of HIV+ patients.



Latent HIV-infected cells form a reservoir that is resistant to antiretroviral therapy (ART) and to clearance by the immune system.

The persistence of this pool with the potential to become reactivated when ART is stopped underscores the challenges of HIV eradication.

Figure 1. Contribution of each organ to the estimated total population of infected cells (as a percentage of the total) before and after ART. *Estes et al, 2017, Nat Med*

CD8+ T cells in HIV

CD8+ T cells have been shown to play an important role in HIV immunity. Hence, CD8+ T cell depletion leads to viral rebound and CD8+ polyfunctionality and cytotoxic abilities are linked to elite controllers. However, HIV studies have been typically carried out in blood samples, and thus the importance of dissecting HIV immunity in gut tissue.

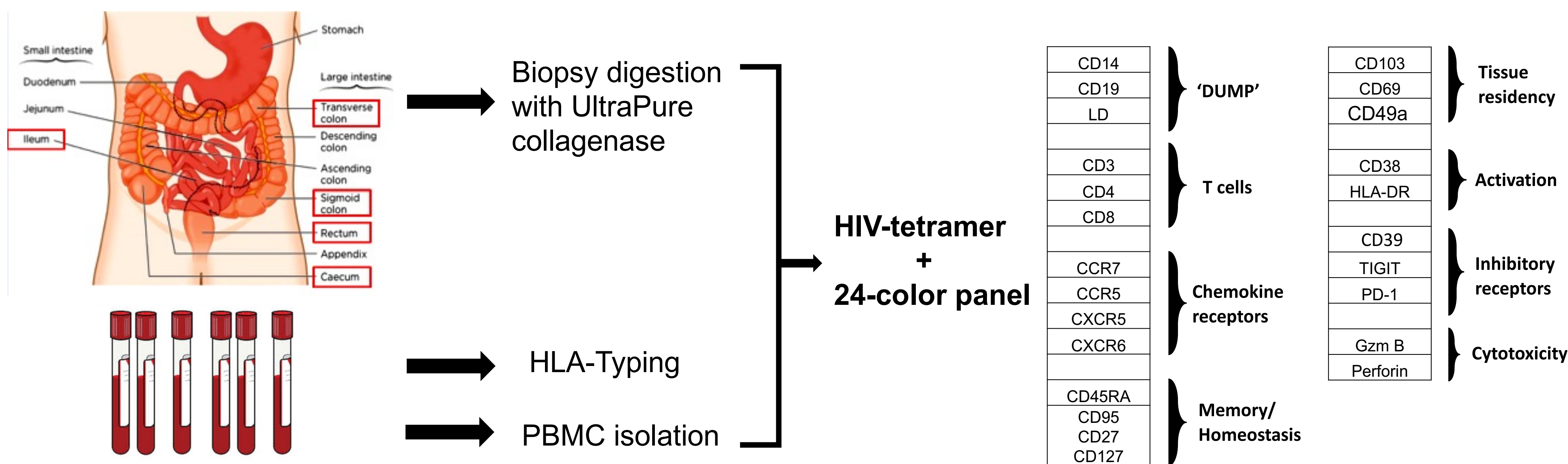


Figure 2. Workflow: Pinch-biopsies and blood from HIV+ healthy donors (n=100) on and without ART (detectable/non detectable viral load).

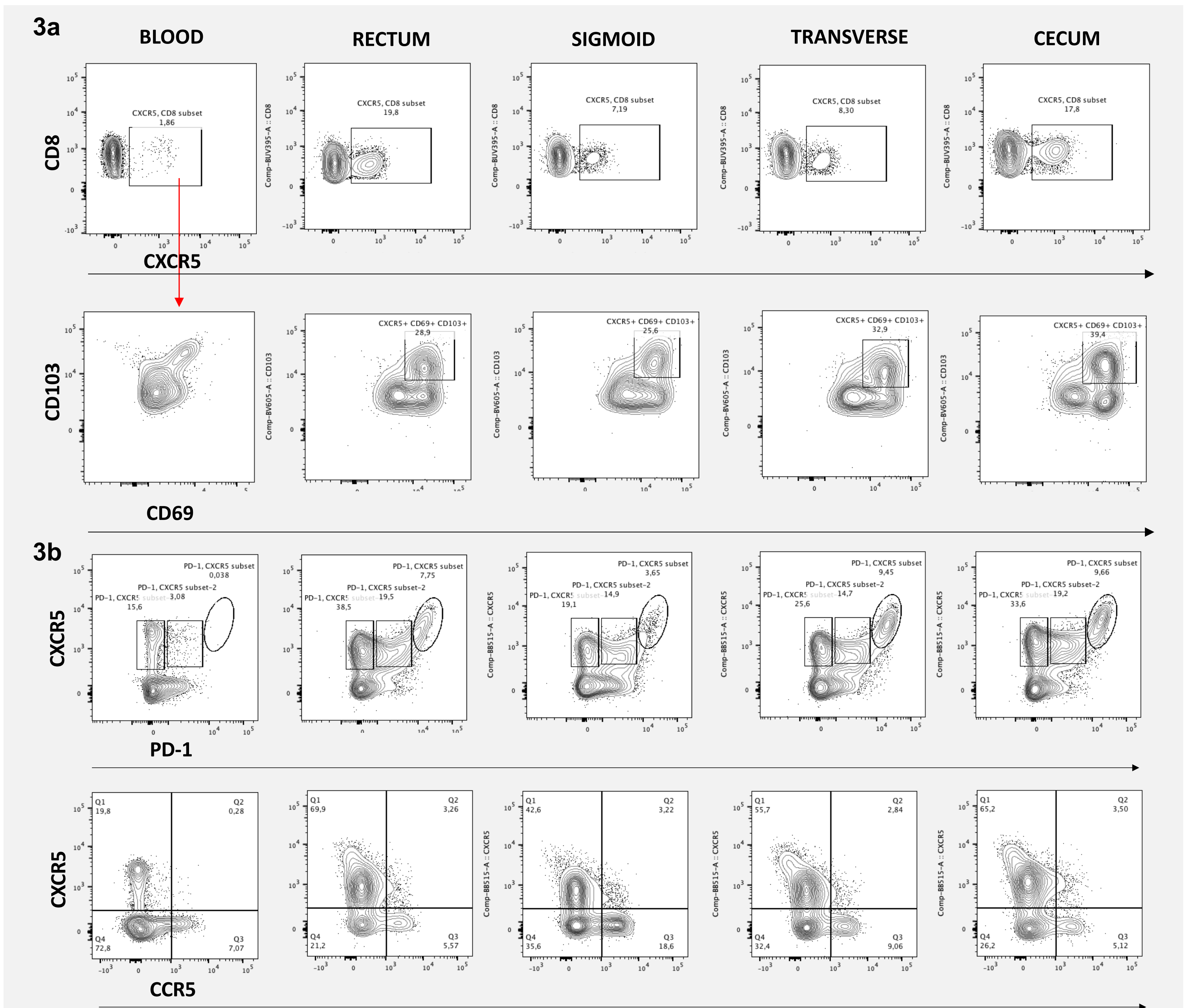


Figure 3. FACS plots from blood and gut biopsies (Patient #001). **3a.** Bulk CD8+ T cells and CD8+ CXCR5+. **3b.** Bulk CD4+.

Aim of the experiments:

This flow cytometry panel aims to study specific questions:

- Identify HIV-specific T cells and their phenotype: can they enter the follicle/do they express CXCR5+? Which cells are the ones with tissue-residency signature?
- Look at differences in terms of cell populations: depleted or activated subsets.
- Study whether distribution is associated with better outcome (clinical data).

Biopsy tissue will also be preserved for future microscopy and RNA/DNAscope experiments as part of collaborations.

This is an ongoing project; shown preliminary results correspond to the very first patient of this cohort.

