

T Regulatory Cells Disrupt the CCL20-CCR6 Axis Driving Th17 Homing to the Gut

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Background

During HIV-1 infection, the integrity of the intestinal immune barrier is disrupted due to a deep depletion of CD4⁺ T cells in the gut. The translocation of microbial products from the gut lumen into the bloodstream has been linked with systemic inflammation. Despite long-term effective cART, CD4⁺ T cells in the *lamina propria* are incompletely restored in most individuals.

Aims

Among the chemotactic axes involved in CD4⁺ T cell homing to the gut, we focused on the CCR6-CCL20 axis as it governs Th17 cells homing, a T cell subset exerting a major role in antimicrobial immunity. We aimed to assess the factors regulating the expression of CCL20 by the enterocytes, and notably the role of the cytokines produced by Treg and Th17 cells.

Methods

Small bowel biopsies were obtained by endoscopy in 20 HIV-1⁺ and HIV-1⁻ individuals. Intestinal lymphocytes phenotype was analyzed by flow cytometry. CCL20 mRNA was quantified by qRT-PCR. The effect of PRR ligands and cytokines on CCL20 expression was explored in an *ex-vivo* system of human primary enterocytes. A coculture was established between the enterocytes and Th17/Treg cells. The expression of CCL20 by the enterocytes was evaluated by qRT-PCR and ELISA.

Results

