

# IMMUNE REGULATION LANGERHANS CELLS IN THE HUMAN FORESKIN

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## **Background and Rationale**

Cells expressing CCR5 and CD4 receptor are primary targets of HIV infection. The foreskin mucosa comprises of largely HIV targeted cells, mostly Langerhans and CD4+ cells. However, the transcriptional and modulatory mechanism of LCs responsible for HIV infection and transmission are poorly understood. Thus, this study aims to evaluate the mechanisms of transcriptional control during immune activation and tolerance of human LCs. Furthermore, characterise LCs based on their ability to modulate HIV transmission.

## **Methodology**

Foreskins of HIV negative men aged >18 will be collected at different local male circumcision clinics in the Western Cape, South Africa. Langerhans cells will be isolated using the crawl and liberate assay and evaluated for gene and protein expression. For gene expression, RNA from TNF- $\alpha$  stimulated LCs will be evaluated using RNA-seq. For protein expression, mass spectrometry will be used to characterise the proteins. Furthermore, flow cytometry will be used to identify the phenotype of LCs during immune activation and tolerance.

## **Expected results**

Results from this study will give a detailed mechanism on how the transcription of Langerhans cells is controlled to shape strategies for HIV prevention as proteomes, genomic and transcriptomics provide a wealth of biological information.