

# Epitope Cross-Reactivity Frequently Differs between Central and Effector Memory HIV-Specific CD8 T Cells<sup>1</sup>

McKinnon, Lyle R.; Ball, T. Blake; Wachihi, Charles; McLaren, Paul J.; Waruk, Jillian L. M.; Mao, Xiaojuan; Ramdahin, Sue; Anzala, A. Omu; Kamene, Jane; Luo, Ma; Fowke, Keith R.; Plummer, Francis A.

## **Abstract:**

HIV diversity may limit the breadth of vaccine coverage due to epitope sequence differences between strains. Although amino acid substitutions within CD8 T cell HIV epitopes can result in complete or partial abrogation of responses, this has primarily been demonstrated in effector CD8 T cells. In an HIV-infected Kenyan cohort, we demonstrate that the cross-reactivity of HIV epitope variants differs dramatically between overnight IFN- and longer-term proliferation assays. For most epitopes, particular variants (not the index peptide) were preferred in proliferation in the absence of corresponding overnight IFN- responses and in the absence of the variant in the HIV quasispecies. Most proliferating CD8 T cells were polyfunctional via cytokine analyses. A trend to positive correlation was observed between proliferation (but not IFN- ) and CD4 counts. We present findings relevant to the assessment of HIV vaccine candidates and toward a better understanding of how viral diversity is tolerated by central and effector memory CD8 T cells.