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COMPARISON OF HIV-SPECIFIC CD4+ T CELL RESPONSES IN HIV1 AND HIV2

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INTRODUCTION: HIV2 infection results in a comparatively attenuated disease profile to that of HIV1 infection, being characterised by a slower rate of CD4+T cell decline and low to undetectable viraemia. Though HIV1-specific immune responses remain detectable throughout the course of disease, there is evidence to suggest that the quality of these responses may have impact on the prognosis. Our aim is to compare the HIV-specific CD4+ T cell responses in two cohorts of HIV1 and HIV2 infected patients living in Portugal, with paired levels of CD4 depletion and without antiretroviral therapy.

METHODS: Peripheral Blood Lymphocytes from HIV1 or HIV2 infected individuals were assessed for their ability to respond to panels of overlapping peptides, spanning equivalent regions of HIV1 or HIV2 *Gag*. IL2 and Interferon- γ production at the single-cell level was measured using intracellular cytokine staining. "Responders" were defined as individuals with detectable Gag-specific CD69+IFN- γ and/or CD69+IL2+CD4+T cells.

RESULTS: The cytokine profiles of the HIV-specific CD4+T cells varied between the two cohorts. HIV2 positive responders had significantly more IL2+CD4+T cells, increased percentages of IL2+IFN- γ +CD4+T cells, and similar percentages of IFN- γ +CD4+T cells than their HIV1 positive counterparts. Worth noting, we observed a significant negative correlation between the percentage of HIV2-specific IL2+CD69+CD4+T cells and both CD4 numbers and percentage, suggesting that the frequency of this population increases with disease progression.

CONCLUSIONS: We documented here that the slow decline of CD4 T cells that is observed in HIV2 infected patients is associated with an increase in the frequency of HIV2 specific IL2-producing CD4+ T cells. This suggests that maintenance of this

population is an important factor in controlling HIV2 infection, and as such identifies it as a potential target for immune-based therapies in HIV/AIDS.

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