

## **Abstract:**

Highly exposed persistently seronegative (HEPS) individuals have previously been shown to mount HIV-1-specific humoral and cellular immune responses in the mucosa, despite their uninfected status. It is thus possible that HEPS individuals are protected from HIV-1 infection at the mucosal level. Recent work supports the hypothesis that dendritic cells are involved in the establishment of a mucosal HIV-1 infection as well as the dissemination to other target cells. However, no previous study has investigated if samples collected from HEPS individuals have the capacity to prevent HIV-1 infection in the presence of dendritic cells *in vitro*. We therefore established an assay that measures HIV-1 neutralization in cocultures of HIV-1-exposed dendritic cells (DC) and PBMC. Plasma and cervicovaginal lavage (CVL) samples from HIV-1-infected patients and HEPS individuals, enrolled in a well-characterized sex worker cohort in Kenya, were evaluated. Most plasma and CVL samples of HIV-1-infected patients neutralized HIV-1 in the DC/PBMC cocultures. Neither plasma nor CVL samples of most HEPS individuals had this capacity. However, they readily neutralized HIV-1 infection of PBMC alone. This may suggest that protection against HIV-1 infection in HEPS individuals occurs prior to interaction between HIV-1-exposed DC and other target cells.