

# HIV-1-specific mucosal IgA in a cohort of HIV-1-resistant Kenyan sex workers

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## **Abstract:**

**Objectives:** Most HIV-1 transmission is sexual; therefore, immune responses in the genital mucosa may be important in mediating protection against HIV infection. This study examined HIV-1-specific mucosal IgA in a cohort of HIV-1-resistant Kenyan female sex workers. **Methods:** HIV-1-specific immune responses were compared in HIV-1-resistant and HIV-1-infected sex workers, and in lower risk uninfected women. Cervical and vaginal samples from each group were tested for HIV-1-specific IgA and IgG by enzyme immunoassay. Systemic T-helper lymphocyte cell responses to HIV-1 envelope peptide epitopes were assayed using an interleukin 2 bioassay. HIV-1 risk-taking behaviours were assessed using standardized questionnaires. **Results:** HIV-1-specific IgA was present in the genital tract of 16 out of 21 (76%) HIV-1-resistant sex workers, five out of 19 (26%) infected women, and three out of 28 (11%) lower risk women ( $P < 0.0001$ ). Among lower risk women, the presence of HIV-1-specific IgA was associated with HIV-1 risk-taking behaviour. Systemic T-helper lymphocyte responses to HIV-1 envelope peptides were present in 11 out of 20 (55%) HIV-1-resistant women, four out of 18 (22%) infected women, and one out of 25 (4%) lower risk women ( $P < 0.001$ ). T-helper lymphocyte responses did not correlate with the presence or titre of virus-specific mucosal IgA in any study group. **Conclusions:** HIV-1-specific IgA is present in the genital tract of most HIV-1-resistant Kenyan sex workers, and of a minority of lower risk uninfected women, where it is associated with risk-taking behaviour. These data suggest a role for mucosal HIV-1-specific IgA responses in HIV-1 resistance, independent of host cellular responses.