

## Publication

## Altered distribution of mucosal NK cells during HIV infection

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**Author(s)** Sips, M.; Sciaranghella, G.; Diefenbach, T.; Dugast, A.-S.; Berger, C. T.; Liu, Q.; Kwon, D.; Ghebremichael, M.; Estes, J. D.; Carrington, M.; Martin, J. N.; Deeks, S. G.; Hunt, P. W.; Alter, G. **Author(s) at UniBasel** Berger, Christoph ;

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The human gut mucosa is a major site of human immunodeficiency virus (HIV) infection and infectionassociated pathogenesis. Increasing evidence shows that natural killer (NK) cells have an important role in control of HIV infection, but the mechanism(s) by which they mediate antiviral activity in the gut is unclear. Here, we show that two distinct subsets of NK cells exist in the gut, one localized to intraepithelial spaces (intraepithelial lymphocytes, IELs) and the other to the lamina propria (LP). The frequency of both subsets of NK cells was reduced in chronic infection, whereas IEL NK cells remained stable in spontaneous controllers with protective killer immunoglobulin-like receptor/human leukocyte antigen genotypes. Both IEL and LP NK cells were significantly expanded in immunological non-responsive patients, who incompletely recovered CD4+ T cells on highly active antiretroviral therapy (HAART). These data suggest that both IEL and LP NK cells may expand in the gut in an effort to compensate for compromised CD4+ T-cell recovery, but that only IEL NK cells may be involved in providing durable control of HIV in the gut.

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