

# Intracellular signaling mechanisms in SIV and HIV infection

## Research project team

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One research topic of our group is the analysis of interactions between viral factors and host cell signaling components in the context of human and simian immunodeficiency virus (HIV, SIV) pathogenesis. Currently, one project focuses on lentiviral counteraction of antiviral host cell mechanisms. We study the function of the accessory viral protein X (Vpx), which is unique to the HIV-2/SIVsm/SIVmac group. HIV-1 is not equipped with Vpx and is nearly unable to transduce human monocytes in vitro. Recently, we identified the anti-viral host gene APOBEC3A (A3A) as new target factor of Vpx and silencing of A3A in human monocytes allows infection with HIV-1. Detailed investigations of this Vpx-mediated inhibition of A3A-dependent restriction of HIV are in progress. In a second project we used SIVsmmPBj (PBj), an acutely pathogenic virus isolated from pig-tailed macaques, as a model to investigate virus-host cell interplay during early acute lentiviral infection. We show that introduction of a point mutation in a viral accessory protein Nef of PBj interferes with the mitogenic signaling pathway and abolishes lethal pathogenicity.

## Funding

Deutsche Forschungsgemeinschaft, DFG