

Development of lentiviral vectors

Research project summary

Lentiviral vectors derived from HIV-2 or SIVsmmPBj are capable for efficient transduction of primary cells of the myeloid lineage, namely monocytes, macrophages, or dendritic cells. For this particular transduction capacity, the viral accessory gene vpx is essential. To generate enhanced vector systems suitable for application in clinical gene transfer, we modify the vector design to improve safety and efficiency. Furthermore, we aim to generate stable cell lines capable for large-scale production of lentiviral vectors. The new vectors are investigated for their capacity to transduce various quiescent target cells, e.g. neurons of the brain. Further topics are the pseudotyping of HIV-2 or SIVsmmPBj vectors by with measles virus envelope proteins to enable targeting of particular cell types, and the generation of non-integrating HIV-2 or SIVsmPBj vectors for transient transduction of target cells.