SUMMARY & MISSION STATEMENT
We try to understand the comprehensive immune control against the human oncogenic \(\gamma\)-herpesviruses EBV and KSHV. We aim to re-install this immune control in patients with the respective virus-associated malignancies by vaccination and to harness the components of this immune control against other tumors.

OVERVIEW
The human oncogenic \(\gamma\)-herpesviruses EBV and KSHV are each associated with around 1-2% of all tumors in patients. Their seroprevalence in the adult human population is, however, much higher with close to 100% for EBV worldwide and more than 50% for KSHV in regions of Subsaharan Africa. The tumorigenicity of these oncogenic viruses is immune controlled in most persistently infected individuals for life, constituting paradigms of comprehensive cell-mediated immune control of cancer cells.

We have characterized protective antigens of EBV that are now widely used in the currently tested vaccine candidates, implicated autophagy in the processing of these antigens for MHC presentation and established \textit{in vivo} infection models for these two exclusively human lymphotropic viruses that recapitulate key features of tumor formation and immune control.

Our future studies aim to refine our understanding of the molecular mechanisms that ensure near perfect immune control of EBV and KSHV in most infected individuals, which of these components fail, when virus associated malignancies emerge and how comprehensive immune control could be re-installed in the respective cancer patients by vaccination. We aim to apply the lessons from these studies to immunotherapies of other human cancers.