

Master thesis project: **Characterization of EBV specific T cell clones**

The global seroprevalence of the Epstein-Barr virus (EBV) is over 90%. It is the causative agent of infectious mononucleosis, and it is estimated that 1.8% of cancer deaths are due to EBV-induced malignancies such as Burkitt's lymphoma or nasopharyngeal carcinoma. Although EBV was discovered in 1964, little is known about the cells that initiate the immune response, which is crucial for developing an effective vaccine.

Additionally, methods to detect EBV-infected cells are primarily indirect; for instance, epitope-specific T cell clones and direct methods using immunoglobulins, such as T cell receptor (TCR)-like antibodies, are currently under investigation; however, sufficient target specificity has never been achieved.

This project will aim to characterize the specificity and sensitivity of EBV-specific T cell clones (TCC) and compare these cells with EBV epitope-specific chimeric antigen receptor (CAR) T cells. EBV-specific T cells have already been sorted and tested for their reactivity. To characterize these TCCs, a combination of cell culture techniques, peptide titration, and alanine scanning will be performed. To compare TCC with virally transduced T cells, co-culture ELISAs, and cytotoxicity assays are used.

Techniques: Cell culture, flow cytometry, ELISA, ELISpot, lentiviral transduction, virus production

Applications: Please send your CV and a brief statement of research interest to muenzc@immunology.uzh.ch and schmid@immunology.uzh.ch.