EBV specific cytotoxic T Cell clones can transiently control EBV infection

Although Epstein Barr virus (EBV) infections typically remain asymptomatic, in a small percentage of patients the virus causes B cell lymphomas and carcinomas. Additionally symptomatic primary EBV infection, called infectious mononucleosis, also predisposes for some of these malignancies and is characterized by massive expansions of cytotoxic T cells, which are mostly directed against lytic EBV antigens that are expressed during virus particle production. This study therefore investigated the protective role of lytic EBV antigen specific T cells during EBV infection and the contribution of lytic EBV infection to virus-associated tumor formation. The results found that lytic EBV antigen specific T cells kill B cells with lytic virus replication and may in this way transiently control EBV infection. Using humanized mice they observed that EBV associated B cell tumors outside secondary lymphoid organs require lytic replication for efficient formation. Thus suggesting that lytic EBV antigens should be explored for vaccination against symptomatic EBV infection and EBV associated extra-lymphoid tumors.

Antsiferova, O. et al. 2014. Adoptive Transfer of EBV Specific CD8+ T Cell Clones Can Transiently Control EBV Infection in Humanized Mice. *PLOS*.