



**InReMed**

## Innovations in Regenerative Medicine

Monday, April 26<sup>th</sup>, 13:00 – 14:00

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### MODULATION OF VIRUS-INDUCED PATHOGENESIS BY GENETIC VARIABILITY AND CO-INFECTIONS

Epstein Barr virus (EBV) is one of the most successful human pathogens in the human population with more than 95% of adults being persistently infected. Curiously, it is also the most growth transforming virus in humans that can convert human B cells into immortalized lymphoblastoid cell lines. Studies in preclinical models and characterization of patients with primary immunodeficiencies have shown that cytotoxic lymphocytes, primarily CD8<sup>+</sup> T cells, are essential to provide immune control against EBV associated lymphomagenesis during life-long viral persistence.

In this seminar presentation I will present recent studies from my laboratory that provide evidence for the modelling of some of these effects by genetic variability and co-infections on EBV specific immune control in mice with reconstituted human immune system components. These include effects of human major histocompatibility complex (MHC) polymorphisms, the role of the co-stimulatory protein CD27, as well as co-infections with the human immunodeficiency virus (HIV) and Kaposi sarcoma associated herpesvirus (KSHV). These studies suggest that preclinical small animal models of the human immune system can inform on essential mechanistic features of EBV specific immune control and more generally on human cell-mediated immune responses. Accordingly, they should be further explored for responses to immune modulatory therapies and vaccination.

