

# SIgN Immunology Seminar



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## Arenaviruses: from lethal immune pathology to a vaccine

Several members of the arenavirus family can cause hemorrhagic fevers in humans with potentially lethal outcome. In a new animal model for Lassa virus using MHC-class I humanized mice we observed a dual role for T cells, not only protecting from Lassa virus, but also enhancing Lassa fever pathogenesis in non-immunized animals. Subsequently we created a novel replication-defective vaccine vector based on the prototypic arenavirus lymphocytic choriomeningitis virus (LCMV) where we replaced the gene encoding LCMV glycoprotein with vaccine antigens of choice. We then tested the suitability of the LCMV vaccine vector as a preventive AIDS vaccine. Flow cytometry combined with single cell real-time PCR assessment of antigen specific T cells showed that recombinant adenovirus type 5 prime followed by LCMV boost elicited robust CD4 and CD8 T-cell and humoral immune responses. Non-human primate experiments revealed that this vaccination protocol protected against infection after repetitive mucosal challenge with efficacies of 82% per exposure and 62% cumulatively. These features, together with low seroprevalence in humans, suggest that arenavirus based vaccine vectors may show utility as a vaccine platform against infectious diseases and potentially also cancer.

*Host*  
 Dr Katja Fink  
 Singapore  
 Immunology  
 Network, A\*Star

*Date*  
**Wednesday,**  
**17 October 2012**

*Time*  
 11am – 12pm

*Venue*  
 SIgN Seminar Room,  
 Immunos Building  
 Level 4  
 Biopolis