

THE IMMUNE RESPONSES TO INFLUENZA VIRUS IN THE CHICKEN A.G.D. BEAN

The control of viral infections is of critical importance to the poultry industry and this is highlighted by costly outbreaks of infection such as Avian Influenza, Newcastle Disease and very virulent Infectious Bursal Disease. Moreover, influenza infection persists as a major problem in both human and poultry populations. The problems associated with viral infections are becoming more apparent and therefore new anti-viral strategies are required to ameliorate the impact of these infections. Nevertheless, to develop these improved strategies a greater understanding of the anti-viral response is critical. We have investigated the activity of a number of immune response messenger molecules in the antiviral response to assess their potential to be harnessed as anti-viral therapeutics. The results of this research has implications for the development of new therapeutics against increasingly pathogenic infections important to poultry industries worldwide.

Dr Andrew Bean: new therapeutic strategies to fight viruses

Dr Andrew Bean heads the Infection Immunity project within the research stream Innovative Disease Control and research theme Transforming Animal Biosecurity at CSIRO Livestock Industries' Australian Animal Health Laboratory (AAHL) in Geelong, Victoria, Australia.

Working in the area of 'One Health' - an approach that is dedicated to improving the lives of all species, human and animal, through the interaction of human and veterinary medicine -

Dr Bean's research focus is improving health by:

- *enhancing animal and human health*
- *identifying new antiviral strategies*
- *developing better therapeutics and vaccines*
- *improving disease diagnosis.*

His current research areas include:

- *avian influenza*
- *immune molecules and receptors*
- *developing and assessing antiviral therapy*
- *vaccines and adjuvants*
- *therapeutics.*

Dr Bean has a number of projects that investigate the host response to avian influenza. These projects are in collaboration nationally with groups at the University of Melbourne, Monash University and Deakin University, as well as biopharmaceutical company CSL.

Internationally, these projects involve research groups in the US, UK and China.

Dr Bean is involved in the Australian Poultry Cooperative Research Centre (CRC), leading the Boosting immunity through manipulation of the immune system project.

Dr Bean currently supervises four Postdoctorate Fellows, six Doctoral students and one Masters student.