

## AFGW Fellowship 2012 Interim Report

Jana McCaskill, PhD Candidate, University of Queensland Diamantina Institute

Research project:                      Testing of novel antivirals against Hendra virus

Dates of project:                      05/12/12 – continuing

I am very grateful to the AFGW of their support of my research. As detailed in my application in 2012, it was my intention to travel to CSIRO Australian Animal Health laboratory (AAHL) in Geelong, to undertake research testing my novel therapeutic agent against Hendra virus. CSIRO AAHL is a unique high containment facility that is one of the most sophisticated laboratories in the world for the safe handling and containment of animal diseases. The AFGW fellowship has given me the opportunity to travel to CSIRO AAHL and undertake preliminary experiments. These initial experiments have investigated the ability of our trial therapeutic to suppress Hendra virus infection in an animal model via intranasal instillation. We are currently analyzing the results from this study.



*Photo: Entering CSIRO AAHL high containment area*

My project has also characterized the ability of our intravenously administered stealth liposome vector to deliver our antiviral therapy to the virus target cells in the lungs. Delivery to infected cells of the lung via intranasal instillation can be problematic in an infected lung due to the high levels of inflammation and fluid build-up that are caused by viral infection. Our intravenous liposomal administration is a novel method to overcome the barriers seen in intranasal delivery and achieve high uptake of our stealth liposomes in the virus target cells in the lung. The next step in the project is therefore to use our stealth liposome delivery route to treat Hendra virus infection with our trial therapeutic. These experiments have been scheduled for next month.

The support from the AFGW fellowship has also enabled the preparation of my work for publication, an important step in the dissemination of scientific knowledge. We have submitted a manuscript entitled “Potent inhibition of Hendra virus infection via RNA interference and Polyinosinic:polycytidylic acid

immune activation” which has acknowledged the assistance of the AFGW fellowship in the work presented. I have also had the opportunity to present my work at the Lorne Infection and Immunity conference in February this year.

Once again, I would like to thank AFGW for the fellowship, and look forward to sharing with you the outcomes of my research at the end of the project.



*Photo from left to right: Dr Margaret Peel, Marion Jones, Jana McCaskill, and AFGW immediate past president Dr Jane Baker OAM*