

P013 Characterisation of poxvirus proteins that inhibit NF κ B and contribute to virus virulence

Orla Mulhern, Martina Schroeder and Andrew Bowie

*School of Biochemistry and Immunology, Trinity College
Dublin, Dublin 2, Ireland*

NF κ B is a critical transcription factor in the innate immune response, and as such numerous viruses have been shown to have mechanisms of modulating NF κ B activity. Vaccinia Virus (VACV) is a poxvirus used to vaccinate against smallpox, which is caused by the poxvirus variola. Recently we have identified a number of VACV proteins, which are conserved in variola, that can inhibit NF κ B function often by distinct mechanisms. For example, A46 and A52 have been shown to inhibit IL-1 and Toll-like receptor (TLR) signalling by interacting with host signalling proteins such as MyD88 and IRAK2, and to contribute to virulence. Here we describe the identification and characterisation of a novel poxvirus protein, with far broader effects on virulence and NF κ B function than either A46 or A52. The fact that VACV has retained so many distinct genes that encode proteins which inhibit NF κ B, and individually contribute to virulence, demonstrates the importance of NF κ B in the anti-viral response.