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Characterization of hendra virus V protein interactions with human nuclear transport receptors reveals opportunities to target hendra virus infection

Hendra virus (HeV) is a paramyxovirus that causes severe disease and a high incidence of fatality in infected humans. Despite recurrent outbreaks and potential for human lethality no vaccine or anti-viral agent is available to prevent or treat human HeV infection. Key to HeV pathogenicity is the viral phosphoprotein (P) gene, which also encodes the V and W proteins as distinct products. V modulates the host response to infection by targeting numerous host proteins. Here, we show nuclear transport receptors are amongst those targeted by HeV V. We characterize the interactions and identify key residues in V that mediate the interaction. Finally, we report specific inhibitors of nuclear transport prevent interaction with host transporters, and reduce HeV infection. These findings broaden our understanding of HeV-host interactions and have implications for the design of novel anti-HeV therapeutics.

Biography

Natalie Borg has completed her PhD from the University of Melbourne and postdoctoral studies from Monash University Department of Biochemistry and Molecular Biology. She is an ARC Future Fellow and Heads the Immunity and Infection Laboratory at the leading Australian University, Monash University. She has published 29 papers in premier journals including *Nature* and *Nature Structural and Molecular Biology*.

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