

Transmission of two Australian strains of murine cytomegalovirus (MCMV) in enclosure populations of house mice (*Mus domesticus*)

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**Abstract**

To control plagues of free-living mice (*Mus domesticus*) in Australia, a recombinant murine cytomegalovirus (MCMV) expressing fertility proteins is being developed as an immunocontraceptive agent. Real-time quantitative PCR was used to monitor the transmission of two genetically variable field strains of MCMV through mouse populations after 25% of founding mice were infected with the N1 strain, followed by the G4 strain 6 weeks later. Pathogen-free wild-derived mice were released into outdoor enclosures located in northwestern Victoria (Australia). Of those mice not originally inoculated with virus, N1 DNA was detected in more than 80% of founder mice and a third of their offspring and similarly, G4 DNA was detected in 13% of founder mice and in 3% of their offspring. Thus, prior immunity to N1 did not prevent transmission of G4. This result is promising for successful transmission of an immunocontraceptive vaccine through Australian mouse populations where MCMV infection is endemic. © 2005 Cambridge University Press.