



International Journal of  
**Virology**

ISSN 1816-4900



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## Reverse Genetics Allow Scientists to Slow Spread of Rubella Virus

*Scientists have identified the gene that allows the Rubella virus to block cell death and reverse engineered a mutant gene that slows the virus's spread.*

Tom Hobman and a team of researchers at the University of Alberta's Faculty of Medicine and Dentistry believed that RNA viruses were able to spread by blocking the pathways in cells that lead to cell suicide, and isolated the responsible gene in Rubella, also known as German measles. They then created a mutant version of this gene that made the virus spread more slowly. These results are reported in PLoS Pathogens.

The Rubella virus is responsible for more birth defects worldwide than any other infectious agent. More generally, RNA viruses also cause many viral diseases in humans, including AIDS, influenza, hepatitis C, West Nile disease and Dengue fever. If these findings are applicable to other viruses, it would give researchers more tools for preventing the rapid spread of disease.

Hobman and his colleagues discovered that a well-known

protein in the Rubella virus blocked the process that triggers cell death -- allowing the virus to replicate and spread. The team then decided to conduct some reverse genetic experiments and mutated the capsid protein, which impaired the ability of the virus to replicate itself because cells would undergo cell suicide much earlier in the infection process and more often.

Hobman's team is now studying the West Nile and Dengue viruses to see if these RNA viruses prevent cell suicide in the same way. He hopes the discovery will one day lead to viral infections being limited and shutdown at an earlier stage.

**Source:** Carolina S. Ilkow, Ing Swie Goping, Tom C. Hobman. The Rubella Virus Capsid Is an Anti-Apoptotic Protein that Attenuates the Pore-Forming Ability of Bax. PLoS Pathogens, 2011; 7 (2): e1001291 DOI: 10.1371/journal.ppat.1001291