

# Bird flu leaves the nest -- adapting to a new host

August 26 2009

---

Current research suggests that viral polymerase may provide a new therapeutic target for host-adapted avian influenza. The related report by Gabriel et al, "Spread of Infection and Lymphocyte Depletion in Mice Depends on Polymerase of Influenza Virus" appears in the September 2009 issue of the *American Journal of Pathology*.

Highly pathogenic avian [influenza](#), commonly known as [bird flu](#), is a strain of the [influenza virus](#) that has adapted to infect birds. Although bird-specific flu strains rarely cross species, further adaption can lead to lethal infection in humans.

To determine which genetic changes may lead to host adaptation, Gülsah Gabriel (currently at the Heinrich-Pette-Institute for Experimental Virology and Immunology the University of Hamburg) and Hans-Dieter Klenk at the Institute of [Virology](#) at the Philipps University of Marburg examined two strains of avian influenza, an unadapted avian strain and an avian strain adapted to infect mice by mutations that increase the efficiency of the viral polymerase.

They found that whereas the avian strain only infected the lungs, the mouse-adapted strain caused suppression of the immune system, which resulted in infection in multiple organs. In addition, while the avian strain caused only mild symptoms in mice, the mouse-adapted strain led to severe illness including pneumonia and infection of the brain, followed by death. The viral polymerase may therefore provide an important target in preventing systemic flu in humans.

Gabriel et al suggest that "reduction of high virus loads by targeting the viral polymerase may play an important role in the treatment of human influenza with systemic virus spread." In future studies, Dr. Gabriel and colleagues will aim to develop drugs interfering with virus polymerase activity.

More information: Gabriel G, Klingel K, Planz O, Bier K, Herwig A, Sauter M, Klenk H-D: Spread of Infection and Lymphocyte Depletion in Mice Depends on Polymerase of Influenza Virus. *Am J Pathol* 2009 175:1178-1186

Source: [American Journal of Pathology](#) ([news](#) : [web](#))

Citation: Bird flu leaves the nest -- adapting to a new host (2009, August 26) retrieved 23 April 2024 from <https://medicalxpress.com/news/2009-08-bird-flu-host.html>

This document is subject to copyright. Apart from any fair dealing for the purpose of private study or research, no part may be reproduced without the written permission. The content is provided for information purposes only.