

Commentary

# Prevention and Control on Avian Hepatitis E Virus

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## Commentary

Infection with avian HEV is normal in chicken flocks, but there is no successful way to stop the disease from spreading. Since there are no effective commercial vaccines or drugs for preventing disease in chickens, preventing fecal-oral transmission can prevent virus infection, although strict biosecurity regulations on chicken farms will restrict virus spread. Cage-free animals had higher positive rates for avian HEV antibodies and RNA than caged animals. Controlling avian HEV infection may be reduced by controlling chicken excrement emissions, while introducing a caged living/raising system will help to better prevent HEV transmission.

Due to the subclinical and chronic infections in chickens, as well as the lack of vaccinations or treatment options, epidemiological examination and the removal of infected chickens were thought to be the only effective methods for avian HEV prevention and control. Since clinical work is at the heart of a biosecurity-based operation, the most effective measures for avian HEV prevention and control should combine two approaches in clinical work. Immunodominant epitopes in truncated avian HEV ORF2 may cause a defensive humoral immune response. The discovery of recombinant ORF2 epitopes has been shown to aid in the production of effective vaccines. While the complete ORF3 proteins were tested for their ability to defend chickens against CaHEV infection, it was discovered that ORF3 protein expression only provides partial immune defence. The majority of these recombinant ORF2/ORF3 products are generated in *E. coli*, but some researchers have used *Lactococcus lactis* as a delivery vector for truncated avian HEV ORF2 protein and showed that the avian HEV ORF2 protein may induce ideal protection against avian HEV-induced hepatitis and liver injury, implying that vaccine development using different vectors can alter host immune responses differently.