

Scientists find chicken antibodies may help prevent H5N1 pandemic

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Scientists have discovered for the first time that antibodies in common eggs laid by hens vaccinated against the H5N1 virus can potentially prevent a possible H5N1 pandemic, raising the possibility that the same principle could be applied to the current H1N1 influenza pandemic.

A team of scientists led by Dr. Huan Huu Nguyen at the International Vaccine Institute (IVI) and those at the U.S. [Centers for Disease Control and Prevention](#) tested the efficacy of the avian antibodies against both influenza viruses H5N1 and H1N1 in mice. Chicken antibodies found in egg yolk had been used mainly for treatment of gastrointestinal infections.

"Our tests show proof-of-concept that antibodies, or the antiviral proteins 'immunoglobulins Y (IgY),' found in consumable eggs laid by vaccinated hens may be an affordable, safe, and effective alternative for the control of influenza outbreaks, including the current H1N1 pandemic," said Dr. Huan Huu Nguyen, an immunologist at the IVI and the lead author of the study, which was published in the April 13th issue of [PLoS ONE](#).

The scientists isolated H5N1-specific antibodies from consumers' eggs sold in Vietnam, where hens are vaccinated against the pathogen, and tested them against infections with [H5N1](#) and related H5N2 strains in mice. When delivered into the nose before infection, the antibodies from the egg yolk prevented the infection. When administered after infection, the same antibodies reduced the severity of the infection, enabling mice

to recover from the disease.

The chicken antibodies could be administered as a nasal spray. This form of 'passive vaccination' could also be applied to prevent disease caused by the current pandemic H1N1, using egg yolk [antibodies](#) from hens vaccinated against the H1N1 virus.

"This study provides a rational basis for the use of passive immunization as an adjunct strategy for early intervention against pandemic influenza, especially in countries that have implemented mass vaccination of poultry," said Dr. Cecil Czerkinsky, Deputy Director-General of the IVI.

"This is a very exciting project that could be carried out with materials produced in the developing world in the absence of a highly complex infrastructure. As a result, this approach would have the opportunity to save millions of lives," said Dr. David Briles, a renowned microbiologist at University of Alabama at Birmingham in the U.S.

Provided by International Vaccine Institute

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