

Needle-Free Flu Vaccine May Provide Immunity To H1 & H5 Influenza Virus

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<http://www.asianscientist.com/2011/12/in-the-lab/universal-influenza-vaccine-ivi-h5-avian-flu-h1-swine-flu-virus-2011/>

AsianScientist (Dec. 9, 2011) - Korean scientists have discovered that an antigen common to most influenza viruses, called the matrix protein 2, could protect mice against various flu viruses when administered under the tongue.

The protection conferred by the vaccine included immunity to the highly pathogenic avian H5 virus and the pandemic H1 (swine flu) virus.

Importantly, this experimental sublingual vaccine was found to induce immunity in the lungs whereas the same vaccine administered by injection failed to do so and conferred only limited protection against experimental infection.

The study, spearheaded by International Vaccine Institute (IVI) scientist Dr. Man-ki Song and Dr. Haryoung Poo from the Korea Research Institute of Bioscience and Biotechnology (KRIBB), was published online recently in the journal *PLoS ONE*.

Current seasonal influenza vaccines are designed to induce immunity against hemagglutinin (HA), a major component of influenza virus. Because HA undergoes frequent mutations, these vaccines have to be reformulated and manufactured every year.

Due to the recent emergence of highly pathogenic influenza virus strains and the threat of a human flu pandemic, health authorities and vaccine producers are facing increasing pressure to manufacture and deliver a sufficient number of vaccine doses in a short time.

The influenza virus M2 has already been considered as a rational target antigen for development of a universal flu vaccine because this protein is highly conserved among the different types of influenza viruses. Plans to test this vaccination approach in humans are being considered.

"This study suggests that aside from being a more convenient way to immunize people, sublingual vaccination induces special immune responses in the respiratory tract which are important in protection but more difficult to generate with traditional injectable vaccines," said Dr. Cecil Czerkinsky, IVI Deputy Director-General for Laboratory Sciences.

The article can be found at: [Shim BS et al. \(2011\) Sublingual Immunization with M2-Based Vaccine Induces Broad Protective Immunity against Influenza.](#)

Source: [International Vaccine Institute](#).

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