

Vaccine for Human H5N1 Infection

Margaret Chen, Associate Professor, Dept of Immunology and Vaccinology, The Swedish Institute for Infectious Disease Control, and MTC at Karolinska Institutet, Nobels vag 18, 171 82 Solna, Sweden. E-mail: Margaret.Chen@ki.se

The highly pathogenic avian influenza virus H5N1 has caused the death of 140 million domestic birds and infections in more than 200 people. In humans the infection is associated with severe morbidity and a mortality rate reaching as high as 55%. Although H5N1 virus transmission to human is inefficient at the moment, the virus is continuously evolving into new distinct clades and thus in time can acquire critical properties necessary to cause a serious pandemic. As nearly all people are immunologically naïve to the virus the disease burden would therefore be devastating when human-to-human transmission starts to occur. To avoid this, we will need an effective vaccine, a vaccine that matches with the epidemic strain. We also need a substantial increase in vaccine production capacity and more studies in virus mutability. Recent development of inactivated H5N1 human vaccines for pandemic influenza has generated hopeful result and has improved several safety aspects regarding large-scale productions of such vaccines. Furthermore, new promising technologies are in the pipe-line with potential advantages in safety, high immunogenicity/cross-protection and rapid high-yield manufacturing innovations.