

Doctor John Wood

Division of Virology

National Institute for Biological Standards and Control (NIBSC)

Dr. John Wood is currently Principal Scientist in the Division of Virology at the National Institute for Biological Standards and Control (NIBSC) in the UK. Here, he has a number of responsibilities regarding avian flu, including the control and standardisation of influenza vaccines. On behalf of WHO the NIBSC prepares the official standards used to test influenza vaccines, and Dr. Wood directs the official testing of these vaccines as part of an EU network.



His work involves contributing to influenza vaccine strain selection by the WHO and the EU, which includes the serological testing of vaccine trials; the preparation and distribution of influenza viruses to vaccine manufacturers; and the coordination of EU strain selection process.

He is also involved in the development and evaluation of vaccines against potential pandemic strains. This work includes the development of safe vaccine strains from highly pathogenic viruses, as well as testing the protective efficacy of candidate pandemic vaccines. Finally, his work with the NIBSC involves the efficacy of influenza vaccines.

Dr. Wood sits on the WHO advisory panel on influenza vaccine composition and is a member of an Expert Surveillance Panel on equine influenza vaccines. He is also a member of WHO expert groups on immune correlates of protection; development of influenza vaccines with broad spectrum immunity; and biosafety of large scale production of pandemic influenza vaccines.

Through the participation of the NIBSC, Dr. Wood is particularly heavily involved as Coordinator of the FLUPAN collaborative research project. This project, funded by the European Commission, is focused on improving preparation for an influenza pandemic.

In the FLUPAN project, reverse genetics has been used to modify a highly pathogenic H7N1 avian influenza virus, to make it safe to use and grow on mammalian cells. The vaccines have already been made by Sanofi Pasteur in France and are in the final stages of testing. The next step will be organising and earning approval for the clinical trials, scheduled to start in Spring 2006.

FLUPAN is focused on the H7N1 strain, but the project has paved the way for work currently being done on the H5N1 strain. Recently, in the NIBSC BSL4 facility, Dr. Wood was involved in the development and testing of reverse genetics vaccine strains derived from highly pathogenic H5N1 viruses isolated from fatal human cases in 2003 and 2004. These safe vaccine strains have been distributed to vaccine manufacturers worldwide. He has also been involved in the development of standards to test H5N1 vaccines.

Additionally, Dr. Wood is a member of a UK consortium to clinically evaluate candidate pandemic influenza vaccines such as H5N3 and H9N2.

Dr. Wood considers that one of his finest achievements was back in the late 1970's when he developed an influenza vaccine potency test and showed that it was significantly better than the one in use at that time. It was adopted by WHO for use around the world and is still in use today.

He also ranks the FLUPAN project as another significant achievement, as its creation gave a clear indication to the scientific community that the EU was taking pandemic flu seriously and was going to commit funding to research. Dr. Wood regards this as a major milestone in bringing research and technical tools together to make safe vaccine strains from these dangerous viruses.

FLUPAN: Preparing for an influenza pandemic

The aim of this project is to develop a candidate vaccine for human pandemic flu. The partners targeted the H7N1 strain of avian influenza, which caused lethal outbreaks in Italian poultry in 1999. Through a process called reverse genetics, one of the proteins of this H7 virus has been altered to make the virus safe. This process also modified the virus so that it could be grown in a mammalian cell line as well as the more usual poultry eggs. This will make large-scale production of a human vaccine easier and safer.

The new vaccine, called RD-3, will go into clinical trials in the spring of 2006. The tools and techniques developed by FLUPAN can be adapted to develop new vaccines quickly and efficiently, for example against H5N1, so the project has made an important contribution to Europe's pandemic preparedness.

Project Coordinator is Dr. John Wood

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