



EUROPEAN
COMMISSION

Community Research

EU-FUNDED RESEARCH PROJECT

Preparing for an influenza pandemic (Flupan)

Time of action: FLUPAN started in September 2001 and is scheduled to end in November 2006

EU budget (funding): €2.1 million

Abstract

Although the threat of avian influenza has only recently made the major media headlines, Europe began developing its defences many years ago. In September 2001, a team of scientists from the UK, Italy and Norway collaborated with vaccine researchers from Sanofi Pasteur in France on the FLUPAN project. Funded through the Fifth Framework Programme, the project aimed to develop a candidate vaccine for human pandemic flu.

The partners decided to target the H7N1 avian influenza subtype which caused lethal outbreaks in Italian poultry in 1999. In 2003, 80 people in the Netherlands were infected with the related H7N7 subtype caught from poultry; one person died of the disease.

Although recent media attention has been devoted to the H5N1 subtype, researchers believe that H7 subtypes could also cause a pandemic.

The deadly H7N1 strain is too dangerous for standard influenza vaccine production, so the FLUPAN scientists used a technique called reverse genetics to alter the H7 protein and 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. The use of a mammalian host for the virus makes large-scale production of a human vaccine easier and safer. The resulting vaccine will be the first influenza pandemic vaccine produced entirely in mammalian cells.

But the FLUPAN project has done more than produce a potential vaccine against H7 avian influenza. In another strand of this research, surveillance of avian influenza viruses in Italy has enabled the partners to build up a library of reagents which will be a valuable resource for pandemic vaccine development in the future.

As the tools and techniques developed by FLUPAN can be adapted to develop new vaccines quickly and efficiently, for example against H5N1, the project has made an important contribution to Europe's pandemic preparedness.

Status (January 2006)

A vaccine candidate against the H7N1 bird flu virus has been developed using reverse genetics technology and egg-free vaccine production technology. This new vaccine, called RD-3, will go into clinical trials in the spring of 2006. The protocols and techniques for monitoring human infections with avian influenza and carrying out clinical trials which the FLUPAN consortium has developed will be important tools in pandemic preparedness and will provide methods that can be used to develop vaccines also against H5N1 in the event of a pandemic.

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Website

<http://www.nibsc.ac.uk/spotlight/fluplan/>