Jan 13, 2011

Word count: 496

Title: 7

Sentences - 21

**Study offers hope for tackling bird flu**

Bird flu epidemics could be prevented by a new strain of chickens that do not spread avian flu to other birds.

Scientists at the Roslin Institute and Cambridge University have developed genetically modified chickens could stop bird flu outbreaks spreading within poultry flocks.

The development would protect the health of domestic poultry and could also reduce the risk of new flu virus epidemics in the human population.

The study, funded by the Biotechnology and Biological Sciences Research Council (BBSRC), is published in the journal Science.

**Preventing flu epidemics**

Dr Laurence Tiley, Senior Lecturer in Molecular Virology from the University of Cambridge, explained that chickens are potential bridging hosts that can enable new strains of flu to be transmitted to humans.

“Preventing virus transmission in chickens should reduce the economic impact of the disease and reduce the risk posed to people exposed to the infected birds,” he said.

“The genetic modification we describe is a significant first step along the path to developing chickens that are completely resistant to avian flu. These particular birds are only intended for research purposes, not for consumption.”

Using genetic modification to introduce changes that cannot be achieved by animal breeding demonstrates the potential of GM to improve animal welfare in the poultry industry. This work could also help to improve economic and food security in many regions of the world where bird flu is a significant problem.

Professor Helen Sang

Professor of Vertebrate Molecular Development

**Genetic modification**

The Cambridge and Roslin scientists introduced a new gene to chickens that produced a small “decoy” molecule to mimic an important control element of the bird flu virus.

This decoy molecule tricks the virus’ replication system so that it replicates the decoy rather than the viral genome.

When the transgenic chickens were infected with avian flu, they became sick but did not transmit the infection on to other chickens.

This was the case even if the other chickens were normal (non-transgenic) birds.

Dr Tiley continued, “The decoy mimics an essential part of the flu virus genome that is identical for all strains of influenza A.

“We expect the decoy to work against all strains of avian influenza and that the virus will find it difficult to evolve to escape the effects of the decoy.

“This is quite different from conventional flu vaccines, which need to be updated in the face of virus evolution as they tend only to protect against closely matching strains of virus and do not always prevent spread within a flock.”

**Food security risk**

Professor Douglas Kell, BBSRC Chief Executive, said: "Infectious diseases of livestock represent a significant threat to global food security.

“The potential of pathogens, such as bird flu, to jump to humans and become pandemic has been identified by the Government as a top level national security risk.

“The BBSRC funds world-class research to help to protect the UK from such eventualities and the present approach provides a very exciting example of novel approaches to producing disease-resistant poultry.”