**Chicken virus gives insight into cancers**

**Fresh discoveries about a disease commonly found in chickens could improve our understanding of some types of cancers in people.**

The study into Marek’s disease could also have major implications for the poultry industry, making it possible to breed birds with greater resistance to the disease.

**Analysing genes**

Scientists analysed thousands of genes to pinpoint those that play a role in Marek’s disease - a viral infection that costs the global poultry industry more than £1.4 billion a year.

Researchers identified a gene - called IRG1 - that makes chickens more susceptible to the disease.

The gene is thought to cause the death of cells, which can in turn lead to diseases including cancer.

Marek’s disease is highly contagious and chickens are becoming increasingly resistant to vaccination.

Identifying a gene that increases the risk of Marek’s disease could help us breed chickens that are less susceptible to infection.

**Professor Pete Kaiser**

***Chair of Animal Infectious Diseases, The Roslin Institute***

**Tumour growth**

University researchers from The Roslin Institute working with the Institute for Animal Health also found how the Marek’s disease virus may also encourage tumour growth.

Chickens and mammals, including humans, have anti-tumour mechanisms, one of which is controlled by a gene called HIC1.

HIC1 switches on lots of other genes which have anti-tumour effects.

Marek’s disease virus switches off the genes controlled by HIC1 - in other words, it turns off key genes that would normally work to block tumours.

Learning about how chickens affected by Marek’s disease fail to combat the onset of tumours will help us learn more about how certain viruses can trigger cancer in humans.

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**Link to human cancers**

These genes are also linked to fighting tumours in humans.

The study could help research into preventing of some types of cancers in people, which like Marek’s disease, are caused by viruses.

Such viruses include the human papilloma virus, which can lead to cervical cancer, and Kaposi’s sarcoma, which affects patients with HIV.

Both The Roslin Institute at the University of Edinburgh and the Institute for Animal Health, receive strategic funding from the Biotechnology and Biological Sciences Research Council (BBSRC),

The research is published in the Journal of Virology.

**Related links**

* [The Roslin Institute](http://www.roslin.ed.ac.uk/)
* [The Roslin Institute - postgraduate study](http://www.roslin.ed.ac.uk/postgraduate/)
* [Professor Pete Kaiser](http://www.ed.ac.uk/news/staff/pete-kaiser-140110)
* [Journal of Virology](http://jvi.asm.org/)
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