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Hens' Teeth Not So Rare After All

Date: February 23, 2006

Source: University of Manchester

Summary: Scientists have discovered that rarest of things: a chicken with teeth -- crocodile teeth to be precise. Contrary to the well-known phrase, "As rare as hens' teeth," the researchers say they have found a naturally occurring mutant chicken called Talpid that has a complete set of ivories.

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Scientists have discovered that rarest of things: a chicken with teeth -- crocodile teeth to be precise.

Contrary to the well-known phrase, 'As rare as hens' teeth,' the researchers say they have found a naturally occurring mutant chicken called Talpid that has a complete set of ivories.

The team, based at the Universities of Manchester and Wisconsin, have also managed to induce teeth growth in normal chickens -- activating genes that have lain dormant for 80 million years.

Professor Mark Ferguson, one of the scientific team at the University of Manchester, says the research -- published in Current Biology this week -- has major implications in understanding the processes of evolution. It could also have applications in tissue regeneration, including the replacement of lost teeth in humans.

"The mutant bird has severe limb defects and dies before it can hatch," explained Professor Ferguson, who is based in the University's Faculty of Life Sciences.

"It was discovered 50 years ago but no one has ever examined its mouth. What we discovered were teeth similar to those of crocodiles -- not surprising as birds are the closest living relatives of the reptile."

The discovery led the team to wonder whether healthy chickens might still maintain the genetic pathways to re-grow teeth.

"We found we were able to induce teeth to grow in normal chickens by making changes to the expression of particular molecules," said Professor Ferguson.

"All the pathways to make teeth are preserved which helps us understand how evolutionary changes can be brought about by subtle alterations in developmental biology."

Professor Ferguson says a direct application of the research could be in the re-growing of teeth in people who have lost them through accident or disease.

But the study has implications for tissue regeneration more widely.

"The principle of activating specific dormant pathways to stimulate regeneration instead of repair has made applications, to injury, surgery and human disease," he said.

Indeed, building on previous discoveries of scar-free healing in embryos, Professor Mark Ferguson and Dr Sharon O'Kane founded Renovo, a spin-out company from The University of Manchester, which is developing novel pharmaceuticals for the prevention and reduction of scarring.

"Renovo now employs about 100 staff and is the world-leading company in researching and developing novel pharmaceuticals to prevent and improve scarring."

Story Source:

Materials provided by **University of Manchester**. *Note: Content may be edited for style and length.*

Cite This Page:

MLA APA Chicago

University of Manchester. "Hens' Teeth Not So Rare After All." ScienceDaily. ScienceDaily, 23 February 2006. <www.sciencedaily.com/releases/2006/02/060223083601.htm>.

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