

Rabbits hold key to HIV-like virus

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The remains of an ancient HIV-like virus have been found in rabbits. Scientists at Oxford University discovered the unique lentivirus, part of a family of viruses closely related to HIV, ‘fossilised’ inside the genome of the European rabbit. The discovery, reported this week in *Proceedings of the National Academy of Sciences*, promises to change how scientists think about the evolution of viruses including HIV.

RELIK (Rabbit Endogenous Lentivirus type K) is the first lentivirus to be found in rabbits: lentiviruses have previously only been known in cats, primates and hoofed mammals.

RELIK is also the oldest lentivirus discovered so far: at least 7 million years old instead of the 1-2 million year old variants found in cats and primates. Perhaps most significantly of all RELIK is unique among lentiviruses in being able to be transmitted from generation to generation.

Scientists found the virus by analysing publicly available data on the genome of the European rabbit (*Oryctolagus cuniculus*). They used mathematical techniques to find matches between the genome and the structure of enzymes and proteins of known lentiviruses. From this information they were able to establish that they had found a new lentivirus unique to rabbits.

‘It’s like digging up a fossil of an animal no one thought existed’ said Dr Aris Katzourakis, who led the research at Oxford, ‘people thought that lentiviruses could not be endogenous – capable of being transmitted

from generation to generation – because of the way they reproduce. This and RELIK’s age came as a real surprise and offers fresh insight into the family history of these viruses.’ Dr Katzourakis suggests that recreating the RELIK virus in the laboratory, as has been done with other extinct viruses, could help scientists learn even more about the lineage that gave rise to HIV.

Source: Oxford University

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