

NEURODEGENERATION

Virus linked to neuron death

Viruses could be partly to blame for a neurodegenerative disease.

Avindra Nath at the National Institute of Neurological Disorders and Stroke in Bethesda, Maryland, and his colleagues studied post-mortem brain tissue from 11 people who had amyotrophic lateral sclerosis (ALS; also known as motor neuron disease), which leads to muscle weakness and paralysis. They found that neurons expressed a key protein from the human endogenous retrovirus-K, the DNA of which has been incorporated into human genomes over millions of years of evolution.

When the team introduced the gene encoding this protein into cultured human neurons, the cells decreased in number and retracted their neurites — the projections that connect to other cells. Mice expressing this protein showed a loss of muscle-controlling neurons and had muscle dysfunction.

Preventing this virus from being activated could slow the course of ALS, the authors say. *Sci. Transl. Med.* 7, 307ra153 (2015)

MOLECULAR BIOLOGY

DNA clusters help yeast in hard times

Starving yeast cells reorganize their chromosomes into dense clusters in a way that might slow the ageing process.

Angela Taddei from the Curie Institute in Paris used cell imaging and molecular-genetics techniques to visualize the 3D organization of chromosomes inside cells of baker's yeast (*Saccharomyces*

cerevisiae). The team found that starving yeast arrange their chromosomes so that their telomeres — long stretches of DNA at the ends of chromosomes that shorten with ageing — are tightly packed together in the centre of the cell's nucleus. The rearrangement is triggered by free radicals produced by the cell as it gradually exhausts the available food. Mutant strains that cannot produce these 'hyperclusters' do not survive starvation as well as their cluster-producing counterparts.

Packing telomeres together may prevent their degradation,

allowing dormant yeast cells to survive temporary food shortages.

Genome Biol. 16, 206 (2015)

GEOLOGY

Bigger volcanic blasts after impact

Volcanoes in India began spewing more magma around the time an asteroid hit Earth 66 million years ago. These eruptions and the asteroid impact both contributed to the mass extinction that killed off the dinosaurs.

A team led by Paul Renne at the Berkeley

Geochronology Center in California used argon isotopes to date volcanic rocks from India's Deccan Traps. They conclude that within 50,000 years of the impact, the volcanoes in this area began to pour out more lava with each eruption, even though the frequency of eruptions decreased.

Seismic waves generated by the impact, which happened off what is now Mexico's Yucatan peninsula, could have altered the geology of the Deccan Traps by expanding the size of magma chambers, for example. *Science* 350, 76-78 (2015)



VALERI YURKO

ECOLOGY

Animals thrive at Chernobyl

Wildlife populations seem to be increasing near the Chernobyl nuclear-disaster site, which people abandoned after a reactor explosion in 1986.

Jim Smith at the University of Portsmouth, UK, and his colleagues found that the Belarus sector of the exclusion zone around the devastated power plant had abundances of elk, deer and wild boar that were similar to those in four uncontaminated nature reserves in Belarus. Wolf numbers were more than seven times

higher around Chernobyl than in the other reserves. The team also found no correlation between contamination levels near the reactor site and the number of animal tracks.

The findings contradict previous studies suggesting that radiation around Chernobyl is harmful to wildlife populations, and show the resilience of large mammals to chronic radiation exposure, say the authors.

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