

have burned off the outer layers, suggest the authors. *Science* 352, 67–69 (2016)

NEUROSCIENCE

Enzymes help to regrow nerves

A newly uncovered cell-signalling pathway could broaden strategies for repairing injured nerves.

Adult neurons in the central nervous system (CNS) cannot regenerate damaged axons, the branches that conduct electrical signals. Researchers have previously managed to induce axon regeneration in a mouse retina by deleting a gene called *Pten*, finding that the process activated the protein complex mTORC1. Bo Chen at the Yale University School of Medicine in New Haven, Connecticut, and his colleagues have now identified a second regeneration pathway. They found that deleting *Pten* in mouse retinal neurons also inactivates the metabolic enzyme GSK3 β , and that deleting this enzyme in mice with optic-nerve injuries prompted the axons to regrow.

The authors suggest that combined manipulation of the two *Pten* pathways could lead to treatments to repair injured axons in the CNS.

eLife 5, e11903 (2016)

ANIMAL BEHAVIOUR

Hunting habits of wild dogs tracked

African wild dogs that live in woodland eschew the collaborative long-distance pursuit of prey used by their relatives on grass plains.

Alan Wilson and Tatjana Hubel at the Royal Veterinary College in Hatfield, UK, and their colleagues tracked a pack of six wild dogs (*Lycan pictus*) in Botswana's woodland savannah, where most populations of this endangered animal now live. They found that the animals used multiple short-distance attacks in their attempts to capture prey. Unlike in dog packs on the

plains, there was no observed cooperation between the dogs other than travelling together and sharing their kills. Although only 15.5% of individual attacks resulted in a kill, sharing of food ensured that all animals ate regularly.

In another paper, the same team modelled the energy use and benefits of this hunting strategy. Whereas the low-cost, short-distance chase of wild dogs is more costly per kill than for individual hunting by cheetahs (*Acinonyx jubatus*), this is outweighed by the sharing of prey. The dogs might be better equipped to deal with different habitats than was thought, the authors say.

Nature Commun. 7, 11033 (2016); *Nature Commun.* 7, 11034 (2016)

CANCER

Prostate cancer under attack

A nuclear-receptor protein called ROR- γ has a key role in making prostate cancer deadly.

In many cases of prostate cancer, the gene that encodes the androgen receptor becomes overactive and drives tumour progression, leading to fatal tumours that are resistant to castration therapy and contain high levels of ROR- γ . To understand its role, Hong-Wu Chen at the University of California, Davis, Yong Xu at the Guangzhou Institutes of Biomedicine and Health, China, and their team suppressed ROR- γ in cancerous cell lines and in human tumours transplanted into mice. This suppression blocked expression of the androgen-receptor gene and inhibited tumour growth, suggesting that ROR- γ is a crucial component of the castration-resistant tumours.

Current therapies target androgen-receptor levels, but mutations in tumours often make them resistant to such treatment. Targeting ROR- γ could help patients to fight advanced prostate cancer.

Nature Med. <http://doi.org/bdtk> (2016)

ARCHAEOLOGY

Neanderthal uncovered

With the help of a protein-fingerprinting technique, researchers have identified one small chunk of bone out of thousands as belonging to a Neanderthal.

Bone fragments from archaeological sites are often too small to identify the species of origin. Samantha Brown at the University of Oxford, UK, and her colleagues analysed 2,315 such pieces from the Denisova Cave in southern Siberia — where Denisovans (an archaic human group) were first identified.

The team extracted proteins from each fragment, finding human collagen protein in only one. Mitochondrial DNA sequencing and radiocarbon dating then showed that this 1.7-gram piece was from a Neanderthal — not a Denisovan — living more than 50,000 years ago.

Sci. Rep. 6, 23559 (2016)

PALAEOANTHROPOLOGY

Fossil snake colours revealed

Fresh evidence of coloration in ancient animals has been discovered in the 10-million-year-old fossilized remains of a snake.

The colours of many extinct animals, including early birds, reptiles, mammals and amphibians, have been reconstructed through evidence of melanin pigments preserved in fossils. Maria McNamara at University College Cork, Ireland, and her colleagues now report evidence of coloration created by a different type of pigment called a carotenoid, preserved in minerals that replaced the tissues during fossilization.

The team discovered pigment cells, called chromatophores, that would have contained carotenoids and light-reflecting granules in the skin of the fossilized snake,

which was discovered near Teruel in Spain. The findings suggest that the animal had a pale belly and a green back and sides, with brown-black and yellow-green blotches — possibly a form of camouflage. The coloration could also have been a way to signal to other snakes.

Curr. Biol. <http://doi.org/bdxx> (2016)

ASTROPHYSICS

Black-hole crackle-and-pop

Gravitational 'noise' could be easier to detect than previously thought.

Gravitational waves were first observed in 2015 by the Advanced Laser Interferometer Gravitational-Wave Observatory (LIGO) detectors (pictured). This demonstrated the existence of binary black holes and suggested that these are more abundant than some previous estimates indicated. Tania Regimbau, at the Cote d'Azur Observatory in Nice, France, and her colleagues from the LIGO/Virgo collaboration calculated the odds of detecting a constant background noise made by similar black-hole mergers across the observable Universe that are too distant to be detected individually. They find that LIGO and Virgo could potentially detect this background when they reach peak sensitivity in about four years time.

Phys. Rev. Lett. 116, 131102 (2016)



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