

RESEARCH HIGHLIGHTS

Selections from the scientific literature

MOLECULAR PSYCHOLOGY

Cellular cues to compulsive eating

Insulin may play a key part in the development of obesity by acting directly on the brain's reward circuitry.

Jens Brüning at the Max Planck Institute for Neurological Research in Cologne, Germany, and his group genetically engineered mice in which they could inactivate insulin signalling in parts of the mid-brain that drive feelings of motivation and reward. The engineered mice ate more than control mice and became obese. Along the way, they developed mild insulin-resistant diabetes, although their metabolism was otherwise unaffected.

If similar mechanisms occur in obese humans, the authors say, it could help to explain why they tend to eat compulsively. *Cell Metab.* 13, 720–728 (2011)

ASTRONOMY

Blaze marks star's violent death

A singularly intense beam of light was spotted shining from the centre of a distant galaxy on 28 March after a massive black hole ripped a star apart, astronomers say.

The beam, detected by NASA's Swift satellite, lasted for more than two weeks,

M. GARLICK/UNIV. WARWICK



J. HAGER/ROBERT HARDING WORLD IMAGERY/CORBIS

PHYLOGENETICS

Picking out the pika's origins

The collared pika (*Ochotona collaris*; pictured) of Alaska and Canada is descended from its more southerly relative the American pika (*Ochotona princeps*), and not vice versa as previously thought.

Data on the two North American pikas have not allowed researchers to adjudicate between competing hypotheses on the animals' origins. So Kurt Galbreath of Cornell University in Ithaca, New York, and Eric Hoberg of the

Animal Parasitic Diseases Laboratory in Beltsville, Maryland, studied parasites common to both pikas to determine the mammals' ancestry and colonization route.

The duo used genetic sequences to create family trees, which show that the parasites dispersed from south to north. Because they must have done so in their hosts, this means that the pikas moved likewise.

Proc. R. Soc. B doi:10.1098/rspb.2011.0482 (2011)

much longer than any known gamma-ray burst — explosions associated with supernovae that decline in minutes. According to a team led by Andrew Levan of the University of Warwick in Coventry, UK, the blast of light was also around 100 times brighter than light emitted by massive black holes lurking at the centre of galaxies, which are powered as they lap up nearby gas.

So what was it? A second team, led by Joshua Bloom at the University of California, Berkeley, suggests the engine was still a huge black hole, with the mass of at least one million Suns. But the

fuel may have been a single star that strayed too close (artist's impression pictured).

Science 10.1126/science.1207143, 10.1126/science.1207150 (2011)

CANCER BIOLOGY

Senescence not so harmless

Skin-cancer cells that enter senescence, a form of growth arrest that some have proposed using to combat cancer, can rally neighbouring cells to become more invasive.

Previous studies have hinted that, in addition to hindering

cancer cells' growth, senescence might promote the spread of nearby cells. Corine Bertolotto at the French National Institute of Health and Medical Research in Nice and her team found that melanoma cells treated with chemotherapy drugs did senesce, but also secreted proteins associated with inflammation.

Exposing untreated melanoma cells to CCL2, one of these proteins, or to the medium in which treated cells had been grown prompted the cells to metastasize. An inflammatory pathway regulated by the protein NF- κ B controlled the composition of