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Cranium of *Australopithecus sediba* (specimen UW88-50), a new species of australopithec found at the Malapa site in South Africa. Two partial skeletons, dated to about 1.9 million years ago, share many derived features with *Homo* and may thus shed light on the evolution of that genus. See the related Research Articles on pages 195 and 205 and the related News story on page 154.

Photo: Brett Eloff, courtesy of Lee Berger and the University of the Witwatersrand

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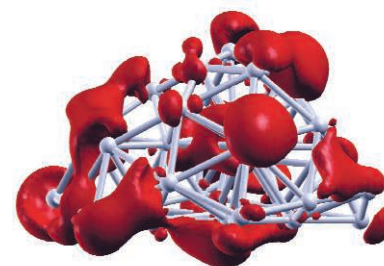
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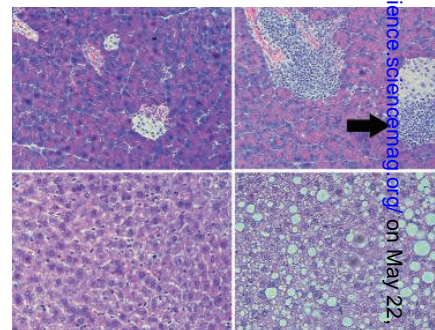
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Recent Hot-Spot Volcanism on Venus from VIRTIS Emissivity Data

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Satellite observations suggest that Venus is a geologically active planet.

10.1126/science.1186785

Coadministration of a Tumor-Penetrating Peptide Enhances the Efficacy of Cancer Drugs

K. N. Sugahara et al.

Anticancer drugs are more effective in mice when they are injected with a peptide that helps the drugs penetrate the tumor.

10.1126/science.1183057

Five-Vertebrate ChIP-seq Reveals the Evolutionary Dynamics of Transcription Factor Binding

D. Schmidt et al.

Binding of two liver-specific transcription factors in several vertebrate species reveals complex regulatory evolution.

10.1126/science.1186176

Reconstitution of Outer Membrane Protein Assembly from Purified Components

C. L. Hagan et al.

Assembly of a β -barrel membrane protein in a cell-free system does not require added energy.

10.1126/science.1188919

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Physicists measure fundamental bits of nuclear matter to within 1.5%.

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Thalidomide eases symptoms of rare blood vessel disease.

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Regionally interconnected turbines could supply power for much of the country.

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RESEARCH ARTICLE: Stabilization of VEGFR2 Signaling by Cerebral Cavernous Malformation 3 Is Critical for Vascular Development

Y. He et al.

CCM3, which is associated with inherited cerebrovascular defects, prevents ligand-mediated degradation of a receptor involved in blood vessel formation.

RESEARCH ARTICLE: AAA+ Proteins RUVBL1 and RUVBL2 Coordinate PIKK Activity and Function in Nonsense-Mediated mRNA Decay

N. Izumi et al.

Two ATPases regulate molecular complexes that ensure genome integrity and accurate gene expression.

RESEARCH ARTICLE: Regulation of G Protein-Coupled Receptor Signaling—Specific Dominant-Negative Effects of Melanocortin 2 Receptor Accessory Protein 2

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Two homologous accessory proteins exert opposing effects on the responsiveness of the melanocortin 2 receptor to the hormone ACTH.

PERSPECTIVE: A Trojan Horse for Parkinson's Disease

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Inhibition of the kinase activity of LRRK2 may be neuroprotective.

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Scientists Embrace Openness

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Some scientists go to great lengths to make everything they do in the lab transparent.

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Regulations at every step of drug development mean jobs for regulatory scientists.

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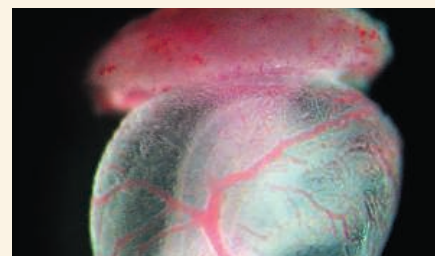
T. Léveillard and J.-A. Sahel

A neuroprotective protein may be broadly useful for treating degenerative retinal diseases caused by mutations in a number of different genes.

COMMENTARY: Training Translators for Smart Drug Discovery

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Human capital is a rate-limiting constraint in translational medicine and therapeutics.



SCIENCESIGNALING
Building blood vessels.

RESEARCH ARTICLE: Klf15 Deficiency Is a Molecular Link Between Heart Failure and Aortic Aneurysm Formation

S. M. Haldar et al.

Klf15 deficiency causes cardiomyopathy and aortopathy by a shared mechanism and defines a novel therapeutic pathway.

RESEARCH ARTICLE: Airway PI3K Pathway Activation Is an Early and Reversible Event in Lung Cancer Development

A. M. Gustafson et al.

A cancer-associated signaling pathway is reversibly activated in the normal airways of smokers before they develop lung cancer.

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