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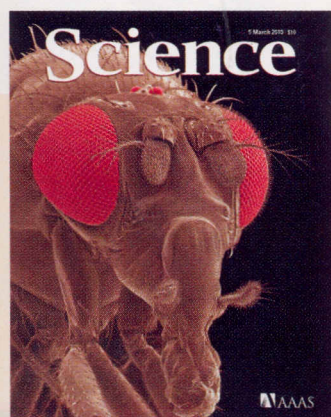
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COVER

Scanning electron micrograph of the fruit fly *Drosophila melanogaster* (magnification 80 $\times$, eyes pseudo-colored). Sestrin, an evolutionarily conserved protein, helps protect fruit flies from age-related pathologies, including fat accumulation, muscle degeneration, and heart failure. See page 1223.

Image: T. Deerinck and M. Ellisman/National Center for Microscopy and Imaging Research, University of California, San Diego

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Decreases in stratospheric water vapor after the year 2000 slowed the rate of increase in global surface temperature.
- 1223** Sestrin as a Feedback Inhibitor of TOR That Prevents Age-Related Pathologies
J. H. Lee et al.
Sestrin proteins protect fruit flies from the tissue degeneration and disruption of metabolic homeostasis that accompany aging.
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- 1231** Charged-Particle Probing of X-ray-Driven Inertial-Fusion Implosions
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- 1235** Deglacial Meltwater Pulse 1B and Younger Dryas Sea Levels Revisited with Boreholes at Tahiti
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- 1238** Geodynamo, Solar Wind, and Magnetopause 3.4 to 3.45 Billion Years Ago
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- 1241** Calibrating the Cryogenian
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M. Sipilä et al.
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N. Shakhova et al.
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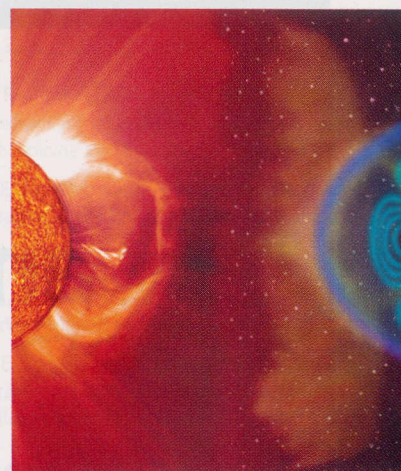
- 1250** Hippocampal Short- and Long-Term Plasticity Are Not Modulated by Astrocyte Ca^{2+} Signaling
C. Agulhon et al.
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- 1258** Spatially Ordered Dynamics of the Bacterial Carbon Fixation Machinery
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- 1261** Retromer Is Required for Apoptotic Cell Clearance by Phagocytic Receptor Recycling
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An intracellular membrane-sorting machinery participates in cellular corpse clearance.

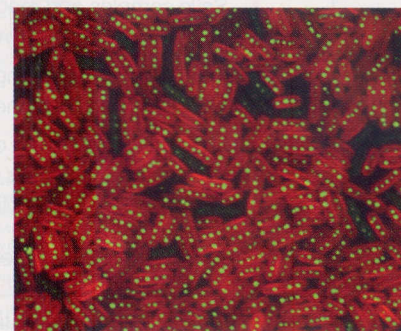
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SCIENCEONLINE

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Observation of an Antimatter Hypernucleus

The STAR Collaboration

Nuclei composed of antimatter are found to form in the high-energy collisions of gold ions.
10.1126/science.1183980

Iron-Clad Fibers: A Metal-Based Biological Strategy for Hard Flexible Coatings

M. J. Harrington et al.

Marine mussel byssal threads have an outer coating in which proteins are linked to metal ions.
10.1126/science.1181044

>> [Science Podcast](#)

Solvent-Mediated Electron Hopping: Long-Range Charge Transfer In $\text{IBr}^-(\text{CO}_2)$ Photodissociation

L. Sheps et al.

The presence of an intervening CO_2 molecule dramatically changes the electron transfer probability between two halogen atoms.
10.1126/science.1184616

Metabolic Syndrome and Altered Gut Microbiota in Mice Lacking Toll-Like Receptor 5

M. Vijay-Kumar et al.

The innate immune system may promote metabolic health through effects on gut microbes.
10.1126/science.1179721

Cryptic Sex-Ratio Bias Provides Indirect Genetic Benefits Despite Sexual Conflict

R. M. Cox and R. Calsbeek

Female lizards improve their fitness by biasing the sex ratio of their progeny on the basis of sire body size.
10.1126/science.1185550

TECHNICAL COMMENTS

Comment on "Movement Intention After Parietal Cortex Stimulation in Humans"

H.-O. Karnath et al.

full text at www.sciencemag.org/cgi/content/full/327/5970/1200-c

Response to Comment on "Movement Intention After Parietal Cortex Stimulation in Humans"

A. Sirigu et al.

full text at www.sciencemag.org/cgi/content/full/327/5970/1200-d

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Early Polar Bear Discovered in Arctic Tundra

Researchers say fossil represents one of the first members of the species.

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Hunger-regulating hormone leptin helps diabetic mice control blood sugar.

Global Warming Didn't Kill the Golden Toad

Researchers find more mundane explanation for demise of colorful amphibian.

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RESEARCH ARTICLE: Polycomb Group Proteins as Epigenetic Mediators of Neuroprotection in Ischemic Tolerance

M. Stapels et al.

Polycomb group proteins protect neurons from injury through a mechanism involving decreased potassium channel function.

RESEARCH ARTICLE: Characterization of a Domain that Transiently Converts Class 2 DYRKs into Intramolecular Tyrosine Kinases

R. Kinstrie et al.

An N-terminal region of a dual-specificity kinase temporarily enables it to phosphorylate a tyrosine rather than a serine or threonine residue.

RESEARCH ARTICLE: Crystal Structure of the α -Kinase Domain of Dictyostelium Myosin Heavy Chain Kinase

Q. Ye et al.

Structural analysis identifies features of atypical serine-threonine kinases that may account for their different activities when compared to those of conventional kinases.

PERSPECTIVE: Allosteric Protein Kinase Regulation by Pseudokinases—Insights from STRAD

T. Rajakulendran and F. Sicheri

A kinase becomes activated when it binds as the "substrate" of a pseudokinase.

GLOSSARY

Find out what CD4, TEM8, and SLK mean in the world of cell signaling.

SCIENCECAREERS

www.sciencereers.org/career_magazine

Free Career Resources for Scientists

Taken for Granted: Labor Unions and Postdoc Disputes

B. L. Benderly

A former University of Massachusetts postdoc sues his college, as postdocs on three UMass campuses unionize.

Perspective: Keep Working (Even If You Don't Get Paid)

B. Allen

When you are unemployed, it is essential to keep your skills and connections fresh.

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PERSPECTIVE: Fighting Back—Peptidomimetics as a New Weapon in the Battle Against Antibiotic Resistance

A. Bragonzi

Agents that target bacterial outer-membrane synthesis effectively tackle antibiotic-resistant infections.

PERSPECTIVE: Of Mice and Men—How an Oncogene Transgresses the Limits and Predisposes to T Cell Acute Lymphoblastic Leukemia

T. Hoang

The *Lmo2* oncogene confers self-renewal potential to nonrenewing thymocyte progenitors.

RESEARCH ARTICLE: Safety and Efficacy of Subretinal Readministration of a Viral Vector in Large Animals to Treat Congenital Blindness

D. Amado et al.

After gene therapy to correct retinal degeneration in one eye, treatment of the second eye is effective—even when immunity to the vector is present.

RESEARCH ARTICLE: Blood Gene Expression Signatures Predict Invasive Candidiasis

A. K. Zaas et al.

The development and validation of a gene expression signature is shown to be effective for the diagnosis of *C. albicans* blood stream infection.

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Science Policy News and Analysis

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