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A High Phase-Space-Density Gas of Polar Molecules
K.-K. Ni et al.
Raman laser irradiation can cool a cloud of KRb molecules to ultralow translational, vibrational, and rotational temperatures, a step toward forming molecular condensates.
10.1126/science.1163861

IMMUNOLOGY
Innate Immunity in Caenorhabditis elegans Is Regulated by Neurons Expressing NPR-1/GPCR
K. L. Styer et al.
In the nematode Caenorhabditis elegans, sensory neurons surprisingly can inhibit innate immune responses, in part through the mitogen-activated protein kinase signaling pathway.
10.1126/science.1163673

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Comment on “Age and Evolution of the Grand Canyon Revealed by U-Pb Dating of Water Table–Type Speleothems”
J. Pederson et al.
full text at www.sciencemag.org/cgi/content/full/321/5896/1634b
Comment on “Age and Evolution of the Grand Canyon Revealed by U-Pb Dating of Water Table–Type Speleothems”
P. A. Pearthree, J. E. Spencer, J. E. Faulds, P. K. House
full text at www.sciencemag.org/cgi/content/full/321/5896/1634c
Response to Comment on “Age and Evolution of the Grand Canyon Revealed by U-Pb Dating of Water Table–Type Speleothems”
V. Polyak, C. Hill, Y. Asmerom
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Ancient Permafrost and a Future, Warmer Arctic
D. G. Froese et al.
The existence of a 700,000-year-old patch of permafrost in sub-Arctic Canada shows that ground ice far from the pole can resist melting during warm intervals.
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Parasite Treatment Affects Maternal Investment

T. E. Reed et al.

Mother seabirds that are infected by parasitic nematodes are less able to gather food and feed their fast-growing sons, shifting the sex ratio and affecting population viability.

Can Catch Shares Prevent Fisheries Collapse?

C. Costello, S. D. Gaines, J. Lynham

Global catch statistics since 1950 suggest that fisheries will be half as likely to collapse if fisherman have a sustainability incentive through a guaranteed right of harvest.

Plasmodium vivax

A small synthetic molecule directed against a microbial protein required for cell division protects mice infected with Plasmodium vivax from death.

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An Inhibitor of FtsZ with Potent and Selective Anti-Staphylococcal Activity

D. J. Haydon et al.

A small synthetic molecule directed against a microbial protein required for cell division protects mice infected with Staphylococcus aureus from death.

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Antiparasitic Activity

K.-M. Wu, Y.-H. Lu, H.-Q. Feng, Y.-Y. Jiang, J.-Z. Zhao

Planting engineered cotton that expresses a natural toxin reduces pest damage to both the cotton itself and to other crops planted nearby, reducing the need for insecticidal spray.

ECOLOGY

Suppression of Cotton Bollworm in Multiple Crops in China in Areas with Bt Toxin–Containing Cotton K.-M. Wu, Y.-H. Lu, H.-Q. Feng, Y.-Y. Jiang, J.-Z. Zhao

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Parasite Treatment Affects Maternal Investment in Sons T. E. Reed et al.

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DEVELOPMENTAL BIOLOGY

Apoptotic Force and Tissue Dynamics During Drosophila Embryogenesis Y. Toyama et al.

During development, programmed cellular death within sheets of cells can generate forces that accelerate tissue fusion; a similar process may apply to wound healing.

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MEDICINE

Clustering of Hyperactive Neurons Near Amyloid Plaques in a Mouse Model of Alzheimer’s Disease M. A. Busche et al.

In a mouse model of Alzheimer’s disease, neurons close to the characteristic deposits of amyloid show high activity, in contrast to the overall reduction in brain function.

NEUROSCIENCE

Reward-Predictive Cues Enhance Excitatory Synaptic Strength onto Midbrain Dopamine Neurons G. D. Stuber et al.

When a rat learns to associate a cue with a reward, dopamine-containing neurons in the midbrain acquire an enhanced response to that cue through the action of glutamate.

MOLECULAR BIOLOGY

Molecular Coupling of Xist Regulation and Pluripotency P. Navarro et al.

X chromosome inactivation in stem cells is reversed, a step in allowing them to become pluripotent, when three factors repress the inactivation RNA.
Mouthful.

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No Glee for Grandma?
Brains of the young and old process rewards in different ways.

China Quake No Stress Reliever
Temblor last May could have activated adjoining fault lines.

SDF-1 bound to CXCR4.

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RESEARCH ARTICLE: Structural Basis of CXCR4 Sulfotyrosine Recognition by the Chemokine SDF-1/CXCL12
The structure of SDF-1 bound to an extracellular domain of CXCR4 illustrates how chemokines recognize receptor sulfotyrosines and helps to identify an inhibitor of leukocyte chemotaxis.

PROTOCOL: Analysis of Signaling Events by Combining High-Throughput Screening Technology with Computer-Based Image Analysis
M. Kodiha, C. M. Brown, U. Stochaj
High-throughput screening and MetaXpress software modules can be adapted to quantify the subcellular localization of fluorescently labeled molecules.

PRESENTATION: Dynamic Visualization of Signaling Activities in Living Cells
Engineered fluorescent reporters allow researchers to follow subcellular activities of signaling components in real time in live cells.

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A science officer at the European Science Foundation describes her journey.

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