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COVER

Pseudocolored scanning electron micrograph (magnification ~34,000x) of the surface of mouse airway epithelia showing cilia protruding from epithelial cells; short protrusions in the foreground are microvilli from a nonciliated cell. In human airway epithelia, these motile cilia bear receptors that detect bitter compounds and signal the cilia to increase their rhythmic beat frequency to help clear noxious substances from the lungs. See page 1131.

Image: Tom Moninger (epithelia generated by Phil Karp)

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1094 Gene-for-Gene Resistance in *Striga*-Cowpea Associations

J. Li and M. P. Timko

A gene thought to defend plants against infectious bacterial pathogens also supplies defense against a parasitic plant.

RESEARCH ARTICLE

1095 On the Origin and Spread of an Adaptive Allele in Deer Mice

C. R. Linnen et al.

The light coat-color variant in deer mice is a mutation selected for its adaptive value for living in sand hills.

REPORTS

1099 Spectroscopic Fingerprint of Phase-Incoherent Superconductivity in the Underdoped $\text{Bi}_2\text{Sr}_2\text{CaCu}_2\text{O}_{8+\delta}$

J. Lee et al.

Scanning tunnelling spectroscopy reveals the pseudogap regime of the cuprates to be an incoherent d-wave superconductor.

>> *Perspective p. 1080*

1103 Strong Coupling Between Single-Electron Tunneling and Nanomechanical Motion

G. A. Steele et al.

1107 Coupling Mechanics to Charge Transport in Carbon Nanotube Mechanical Resonators

B. Lassagne et al.

Individual electrons tunneling onto and out of a carbon nanotube can be used to tune its oscillatory motion.

>> *Perspective p. 1084*

1110 The Chemical Structure of a Molecule Resolved by Atomic Force Microscopy

L. Gross et al.

Derivatization of atomic force microscope tips with carbon monoxide molecules allows atoms to be resolved within adsorbed molecules.

1114 Amplifying the Pacific Climate System Response to a Small 11-Year Solar Cycle Forcing

G. A. Meehl

A combination of mechanisms explains the large response of sea surface temperatures caused by the 11-year solar cycle.

>> *News story p. 1058*

1118 Good Genes and Good Luck: Ammonoid Diversity and the End-Permian Mass Extinction

A. Brayard et al.

In contrast to other groups, ammonoid diversity recovered within 1 million years of the end-Permian extinction to levels higher than before.

>> *Perspective p. 1079*

1121 Enhancement of Biodiversity and Ecosystem Services by Ecological Restoration: A Meta-Analysis

J. M. Rey Benayas et al.

Restoration, biodiversity, and ecosystem services are positively linked in a wide range of ecosystem types across the globe.

1124 Unprecedented Restoration of a Native Oyster Metapopulation

D. M. Schulte et al.

The height of oyster reefs above the river bed promotes their restoration in the Chesapeake Bay, USA.

1128 Functional Characterization of the Antibiotic Resistance Reservoir in the Human Microflora

M. O. A. Sommer et al.

Large numbers of previously unidentified antibiotic resistance genes occur in gut bacteria.

1131 Motile Cilia of Human Airway Epithelia Are Chemosensory

A. S. Shah et al.

Airway epithelia directly sense and respond to noxious substances.

>> *Perspective p. 1081*

1134 The E3 Ligase TRAF6 Regulates Akt Ubiquitination and Activation

W.-L. Yang et al.

Localization and activation of signaling proteins in cancer cells are controlled by ubiquitin labeling.

>> *Perspective p. 1083*1139 *SDH5*, a Gene Required for Flavination of Succinate Dehydrogenase, Is Mutated in Paraganglioma

H.-X. Hao et al.

Analysis of a yeast mitochondrial protein reveals a human tumor susceptibility gene.

1142 Eos Mediates Foxp3-Dependent Gene Silencing in CD4⁺ Regulatory T Cells

F. Pan et al.

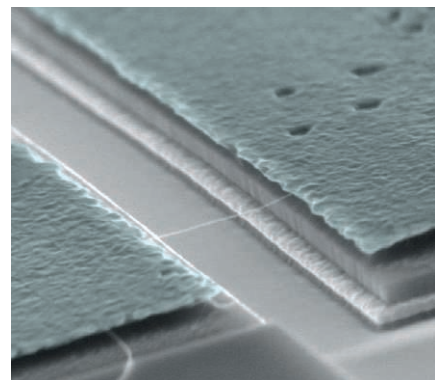
A transcription factor required for gene suppression in regulatory T cells is identified.



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SCIENCEONLINE

SCIENCEEXPRESS

www.sciencexpress.org

Starvation Protects Germline Stem Cells and Extends Reproductive Longevity in *C. elegans*

G. Angelo and M. R. Van Gilst

During starvation, germline stem cells are saved for regeneration when food is restored.

10.1126/science.1178343

Coat Variation in the Domestic Dog Is Governed by Variants in Three Genes

E. Cadieu et al.

Huge variations in the coats of purebred dogs can be explained by the combinatorial effects of only three genes.

10.1126/science.1177808

Complete Resequencing of 40 Genomes Reveals Domestication Events and Genes in Silkworm (*Bombyx*)

Q. Xia et al.

Silkworm genomes show signatures of selection associated with domestication.

10.1126/science.1176620

>> *News story p. 1058*

Nitrous Oxide (N₂O): The Dominant Ozone-Depleting Substance Emitted in the 21st Century

A. R. Ravishankara et al.

Nitrous oxide causes more stratospheric ozone destruction than any other ozone-depleting substance.

10.1126/science.1176985

>> *Science Podcast*

Chiral Organic Ion Pair Catalysts Assembled Through a Hydrogen-Bonding Network

D. Uraguchi et al.

A small cluster of hydrogen-bonded molecules acts as a highly selective asymmetric catalyst.

10.1126/science.1176758

TECHNICALCOMMENTS

Comment on "Floral Iridescence, Produced by Diffractive Optics, Acts as a Cue for Animal Pollinators"

N. I. Morehouse and R. L. Rutowski

full text at www.sciencemag.org/cgi/content/full/325/5944/1072-e

Response to Comment on "Floral Iridescence, Produced by Diffractive Optics, Acts as a Cue for Animal Pollinators"

H. M. Whitney et al.

full text at www.sciencemag.org/cgi/content/full/325/5944/1072-e

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Researchers figure out how galaxies like the Milky Way formed.

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Some powerful bolts reach from cloud tops to the edge of space.

Why We Walk in Circles

Confirming a common belief, researchers find that people really do walk in circles when lost.

SCIENCE SIGNALING

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The Signal Transduction Knowledge Environment

EDITORIAL GUIDE: Re-reviewing Peer Review

M. B. Yaffe

Constructive criticism is the key to effective peer review.

RESEARCH ARTICLE: The VDAC2-BAK Rheostat Controls Thymocyte Survival

D. Ren et al.

The relative abundance of an anion channel and a proapoptotic protein determines thymocyte responses to death signals.

PERSPECTIVE: Controlling the Number of Tooth Rows

M. L. Mikkola

Bmp4 distribution in the mouse jaw is restricted to prevent the induction of supernumerary teeth.

PERSPECTIVE: Epac2—A Molecular Target for Sulfonylurea-Induced Insulin Release

S. A. Hinke

Epac2 is an intracellular receptor for a commonly used class of antidiabetic medications.

PRESENTATION: The Mechanotransduction Machinery of Hair Cells

N. Grillet et al.

Studying genes linked to deafness identifies components of the ear's mechanotransduction apparatus.

TEACHING RESOURCE: Training for Peer Review

N. R. Gough

Graduate students and postdocs may benefit from formal training in peer reviewing.

SCIENCE CAREERS

www.sciencereers.org/career_magazine

Free Career Resources for Scientists

Dealing With Debt

K. Hede

Education debt can make it difficult for physician-scientists to stay on a research course.

Winning Strategies: Advice From the PECASE Winners

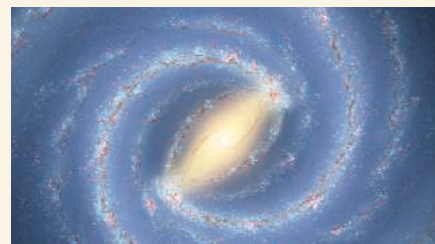
S. Gaidos

There are no recipes for scientific success, but these principles can be counted on.

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Science Careers Staff

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Science Policy News and Analysis

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