COVER
Detail from *The Last Automat III* by Max Ferguson. Sluggish operation of the reward circuitry in the brain may lead individuals to eat calorie-dense foods (such as pie) to try to compensate, placing them at risk for obesity. See page 449.
*Image: The Last Automat III, 2003 (oil on panel); Max Ferguson/Bridgeman Art Library/Getty Images*

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Structure and Molecular Mechanism of a Nucleobase-Cation-Symport-1 Family Transporter

S. Weyand et al.
The structure of a membrane transporter in an open state suggests that in- and out-facing cavities reciprocally open and close coordinated by two transmembrane segments.

10.1126/science.1164440

The Fermi Gamma-Ray Space Telescope Discovers the Pulsar in the Young Galactic Supernova Remnant CTA 1

G. Kanbach et al.
The Fermi Space Telescope has detected a gamma-ray pulsar associated with a young supernova remnant, implying that such stars may be unidentified gamma-ray sources.

10.1126/science.1165572

Detection of GTP-Tubulin Conformation in Vivo Reveals a Role for GTP Remnants in Microtubule Rescues

A. Dimitrov, M. Quesnoit, S. Moutel, I. Cantaloube, C. Poüs, F. Perez
GTP-bound tubulin is found at microtubule ends in living cells and also within microtubules, where it may promote repolymerization and avert microtubule collapse.

10.1126/science.1165401

Observation of Pulsed γ-Rays Above 25 GeV from the Crab Pulsar with MAGIC

The MAGIC Collaboration
The MAGIC telescope has detected higher-energy, pulsed gamma rays from the Crab pulsar and a threshold suggesting that they are emitted from the outer magnetosphere.

10.1126/science.1164718

Quantifying Coauthor Contributions

C. H. Sekercioglu

Biofuels: Clarifying Assumptions

V. Khosla

Response

T. D. Searchinger and R. A. Houghton

Reanalysis of archived samples of an experiment simulating production of organic molecules in volcanic gases by lightning shows that they contain many amino acids.

Science Podcast

Fixing Climate
What Past Climate Changes Reveal About the Current Threat—and How to Counter It

W. S. Broecker and R. Kunzig, reviewed by K. Caldeira

Earth: The Sequel
The Race to Reinvent Energy and Stop Global Warming

F. Krupp and M. Horn, reviewed by F. T. Manheim

Uncle Phil and the Atomic Bomb

J. Abelson and P. H. Abelson, reviewed by C. T. Prewitt

La forêt danse (The Dancing Forest)
B. Lainé

When Embryonic Stem Cell Lines Fail to Meet Consent Standards

J. Sugarman and A. W. Siegel

It’s the Sequence, Stupid!

H. A. Coller and L. Kruglyak

In Praise of Pores

P. Colombo

Toward Pore-Free Ceramics

G. L. Messing and A. J. Stevenson

Transforming Light

V. M. Shalaev

A New Spin on the Doppler Effect

R. D. McMichael and M. D. Stiles

RNA Computing in a Living Cell

E. Shapiro and B. Gil

Conservation and Rewiring of Functional Modules Revealed by an Epistasis Map in Fission Yeast

A. Roguev et al.

Comparison of genetic wiring in two types of yeast reveals that protein complexes are conserved, but the interactions between them can change radically between species.

Complex Patterning by Vertical Interchange Atom Manipulation Using Atomic Force Microscopy

Y. Sugimoto et al.

Atoms of tin and silicon are reversibly and controllably exchanged between the tip of an atomic force microscope and a substrate, allowing atomic patterning of a surface.

Catalytic Conversion of Biomass to Monofunctional Hydrocarbons and Targeted Liquid-Fuel Classes

E. L. Kunkes et al.

A set of two reactors, one that breaks down biomass sugars and a second that directs chain formation, can synthesize various hydrocarbon fuels.
BIOCHEMISTRY
Remeasuring the Double Helix
R. S. Mathew-Fenn, R. Das, P. A. B. Harbury

Pieces of DNA in solution are much softer than DNA under tension and unexpectedly stretch large amounts over several helical turns.

NEUROSCIENCE
Relation Between Obesity and Blunted Striatal Response to Food Is Moderated by TagI A1 Allele
E. Stice, S. Spoor, C. Bohon, D. M. Small

Individuals whose reward centers of the brain respond sluggish after eating prefer calorie-dense foods, which may account for their greater propensity to gain weight. >> Science Podcast

IMMUNOLOGY
Innate Immunity in Caenorhabditis elegans Is Regulated by Neurons Expressing NPR-1/GPCR
K. L. Styer et al.

In the worm Caenorhabditis elegans, sensory neurons surprisingly can inhibit innate immune responses, in part through the mitogen-activated protein kinase (MAPK) signaling pathway.
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RESEARCH ARTICLE: Regulation of P2X2 Receptors by the Neuronal Calcium Sensor VILIP1
S. Chaumont, V. Compan, E. Toulme, E. Richler, G. D. Housley, F. Rassendren, B. S. Khakh
Optics and electrophysiology reveal the dynamics of an ATP-gated ion channel signaling complex.

RESEARCH ARTICLE: BDNF Selectively Regulates GABA<sub>a</sub> Receptor Transcription by Activation of the JAK/STAT Pathway
Brain-derived neurotrophic factor regulates a GABA receptor subunit through the repressor ICER.

PERSPECTIVE: Acetylation of MKP-1 and the Control of Inflammation
H. Chi and R. A. Flavell
Toll-like receptor signaling is inhibited by acetylated MKP-1, a mitogen-activated protein kinase phosphatase.

PREVIEW
Get a sneak peek at articles coming up in the 21 October issue related to this week’s Science special issue on cell signaling.

>> Cell Signaling section p. 389 and www.sciencemag.org/cellsignaling08/

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