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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Published by AAAS
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

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RNA Computing in a Living Cell
E. Shapiro and B. Gil >> Report p. 456

Detection of GTP-Tubulin Conformation in Vivo Reveals a Role for GTP Remnants in Microtubule Rescues
A. Dimitrov, M. Queisnoit, 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 $\gamma$-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
A stochastic process, in which a regulatory repressor dissociates from either one or two DNA sites, determines which of two phenotypes is so that when light activates one, it triggers the enzymatic output of dihydrofolate reductase of the other. Two allosterically regulated proteins can be engineered to interact that can be engineered into cells is activated when it is bound by an aneuploid mouse carrying a human chromosome shows that genetic sequence can dominate epigenetic, cellular, and organizational effects in determining transcriptional regulation and gene expression. Two small, weakly bound objects in the outer solar system orbit each other more than 100,000 kilometers apart, a distance that challenges ideas for such binaries form. The addition of hydrogen bonding units to two block copolymers leads to a template with square patterns that can be used for manufacturing integrated circuits. Two all allosterically regulated proteins can be engineered to interact so that when light activates one, it triggers the enzymatic output (dihydrofolate reductase) of the other.
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VILIP1 interacts with P2X2 receptors in dendrites.

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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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