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Heavy pollution blankets Tiananmen Square, Beijing, on 27 December 2007. Chinese authorities are taking drastic measures to improve the city’s air quality for the Olympics. Bad air is just one of many environmental challenges China is facing. See the special News Focus section beginning on page 628.
Image: Feng Li/ Getty Images

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DEVELOPMENTAL BIOLOGY
Induced Pluripotent Stem Cells Generated from Patients with ALS Can Be Differentiated into Motor Neurons
J. T. Dimos et al.
Skin cells from elderly individuals with a mutation that causes amyotrophic lateral sclerosis (ALS) were used to derive stem cells that could then be differentiated.
10.1126/science.1158799

PALEOClimate
Regional Synthesis of Mediterranean Atmospheric Circulation During the Last Glacial Maximum
J. Kuhlemann et al.
A three-dimensional reconstruction of atmospheric temperatures in the Mediterranean during glacial times is analogous to one of winter during the Little Ice Age.
10.1126/science.1157638

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P. M. Djurič et al.
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BREVIA
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Evidence of Global Chlorophyll d
Y. Kashiyama et al.
A survey of chlorophyll d, used by a cyanobacterium for harvesting infrared light, implies that this microbe inhabits a much wider range than previously thought.

RESEARCH ARTICLES
BIOCHEMISTRY
Crystal Structure of the Termination Module of a Nonribosomal Peptide Synthetase
A. Tanovic, S. A. Samel, L.-O. Essen, M. A. Marahiel
A large enzyme complex assembles peptide natural products without ribosomal participation by successive catalytic steps at the end of a flexible, substrate-loaded arm.

CELL BIOLOGY
Essential Cytoplasmic Translocation of a Cytokine Receptor–Assembled Signaling Complex
A. Matsuzawa et al.
Degradation of one member of a protein complex that forms when a cytokine receptor is activated causes the complex to move to the cytoplasm, triggering the downstream pathway.

REPORTS
ASTRONOMY
Protostar Formation in the Early Universe
N. Yoshida, K. Omukai, L. Hernquist
A model traces the coalescence of small variations in gas density after the Big Bang into protostars, showing that the first stars would be large enough to make heavy elements.

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High Rates of Oxygen Reduction over a Vapor Phase–Polymerized PEDOT Electrode
B. Winther-Jensen et al.
A conducting polymer grown on a high–surface area membrane exhibits rates of oxygen reduction for electrochemical applications comparable with those of platinum electrodes.

High-Resolution Greenland Ice Core Data Show Abrupt Climate Change Happens in Few Years
J. P. Steffensen et al.
Greenland’s climate flipped to a different state within 1 to 3 years more than once during the last deglaciation.

Colossal Ionic Conductivity at Interfaces of Epitaxial ZrO$_2$Y$_2$O$_3$/SrTiO$_3$ Heterostructures
J. Garcia-Barriocanal et al.
Thin layers of zirconium oxide containing some yttrium in a strontium titanate fuel cell increase its ionic conductivity, allowing it to operate at much lower temperatures.

The Global Stoichiometry of Litter Nitrogen Mineralization
S. Manzoni, R. B. Jackson, J. A. Trofymow, A. Porporato
A global data set shows that the decomposition rate of plant litter is primarily controlled by its nitrogen content, which affects the rate of microbial activity.

Regulation of CD45 Alternative Splicing by Heterogeneous Ribonucleoprotein, hnRNPLL
S. Oberdoerffer et al.
A ribonucleoprotein directs the splicing of the transcript for CD45, a transmembrane tyrosine phosphatase that initiates signaling through antigen receptors.
Anesthetics increase postoperative pain.

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Anesthetics increase postoperative pain.

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N. R. Gough and A. M. VanHook
Some anesthetics activate TRPA1 channels to trigger pain and nerve-mediated inflammation.

PRESENTATION: A Static Network Analysis Tool for Pharmacological Analysis of Signal Transduction Pathways
B. B. Samal and L. E. Eiden
Simulate knocking out one or more components from a pathway to find alternate connections between a stimulus and a target response.

A career in keeping athletics clean.

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B. L. Benderly
Organizers claim success in unionizing postdocs on University of California campuses.

A Scientist in the Service of Clean Sports
E. Pain
Chemist Osquel Barroso matches his scientific and sporting interests at the World Anti-Doping Agency.

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Careers in Research Support
S. Gaidos
Institutions recognize the advantages of hiring science Ph.D.’s as research administrators.

August 2008 Funding News
J. Fernández
Learn about the latest in research funding, scholarships, fellowships, and internships.

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