COVER
An artist’s conception of the antibiotic penicillin and some of the bacteria that have developed resistance to various antibiotics. A special section beginning on page 355 explores the rise and spread of so-called bad bugs and possible interventions.
*Illustration: Chris Bickel/Science*

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Plant Immunity Requires Conformational Changes of NPR1 via S-Nitrosylation and Thioredoxins

Y. Tada et al.

After a pathogen invades a plant, a protein, usually kept in a multimeric state by S-nitrosylation, is dissociated by thioredoxin, freeing the monomers for defense responses.

10.1126/science.1156970

GEOCHEMISTRY

Ferruginous Conditions Dominated Later Neoproterozoic Deep-Water Chemistry

D. E. Canfield et al.

Low sulfur input caused the deeper ocean to become anoxic and rich in ferrous iron 750 million years ago, a reversal from the more oxidizing conditions of the previous 1 billion years.

10.1126/science.1154499

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.

10.1126/science.1157340

TECHNICAL COMMENT ABSTRACTS

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Comment on "A 3-Hydroxypropionate/4-Hydroxybutyrate Autotrophic Carbon Dioxide Assimilation Pathway in Archaea"

T. J. G. Ettema and S. G. E. Andersson

full text at www.sciencemag.org/cgi/content/full/321/5887/342b

Response to Comment on "A 3-Hydroxypropionate/4-Hydroxybutyrate Autotrophic Carbon Dioxide Assimilation Pathway in Archaea"

I. A. Berg, D. Kockelkorn, W. Buckel, G. Fuchs

full text at www.sciencemag.org/cgi/content/full/321/5887/342c

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Ice Scour Disturbance in Antarctic Waters

D. A. Smale et al.

Icebergs have increasingly scoured the coastlines along the West Antarctic Peninsula as its ice shelves and glaciers have waned, affecting benthic marine communities.

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Identification of SLEEPLESS, a Sleep-Promoting Factor

K. Koh et al.

A search for genetic modulators of sleep in Drosophila identified a gene encoding a brain protein that is likely secreted and is required for recovery from sleep deprivation.

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Properties of Gamma-Ray Burst Progenitor Stars

P. Kumar, R. Narayan, J. L. Johnson

Analysis of the x-ray afterglow of intense gamma-ray bursts shows that the bursts result from consumption of the outer part of a dense star and define the star’s rotation rate.
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Y. Fang, N.-H. Seong, D. D. Dlott
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J. A. Evans
As journals become available electronically, scientists and scholars have more articles at their fingertips but cite relatively fewer, and these tend to be more recent. >> News story p. 329

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A model of evolutionary body-size changes that accounts for physical constraints and extinction risk reproduces the size distribution of land mammals from the Quaternary.

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The bacterial second messenger cyclic di–guanosine monophosphate controls a wide variety of cellular functions by acting on a riboswitch motif in numerous messenger RNAs.

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Bottom-Up Dependent Gating of Frontal Signals in Early Visual Cortex
L. B. Ekstrom et al.
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REVIEW: Host-Directed Drug Targeting of Factors Hijacked by Pathogens
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Find out what DILP, HRE, and OGT mean in the world of cell signaling.

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Check out the more than 50 cell signaling–related meetings happening in the second half of 2008.

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