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Drug Resistance

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Deadly Defiance

NEWS
The Bacteria Fight Back
Collateral Damage: The Rise of Resistant C. difficile

Trench Warfare in a Battle With TB
Anti-TB Drugs: And Then There Were None

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Antibiotics and Antibiotic Resistance Genes in Natural Environments
J. L. Martinez

Outwitting Multidrug Resistance to Antifungals
B. C. Monk and A. Goffeau

>> For related online content, see the Science Podcast, p. 311
PLANT SCIENCE

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

LETTERS

The Cost of Conservation M. Bode et al.

Conservation with Caveats B. W. T. Coetzee

Response C. Kremen et al.

CORRECTIONS AND CLARIFICATIONS

BOOKS ET AL.

Insomniac

G. Greene, reviewed by M. L. Perlis

Re-Engineering Philosophy for Limited Beings

Piecewise Approximations to Reality

W. C. Wimsatt, reviewed by K. Sterelny

TECHNICAL COMMENT ABSTRACTS

MICROBIOLOGY

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

POLICY FORUM

Assisted Colonization and Rapid Climate Change

O. Hoegh-Guldberg et al.

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Vertebrate Vocalizations

D. Margoliash and M. E. Hale

Was the Younger Dryas Global?

T. V. Lowell and M. A. Kelly

A Hotter Greenhouse?

M. Huber

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

BREVIA

OCEAN SCIENCE

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.

RESEARCH ARTICLE

NEUROSCIENCE

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.

REPORTS

ASTRONOMY

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.

10.1126/science.1157340
A newly described type of protein kinase found in the Golgi

H. O. Ishikawa

Four-jointed Is a Golgi Kinase That Phosphorylates

CELL BIOLOGY

Signal-Mediated Dynamic Retention of
Glycosyltransferases in the Golgi
L. Tu, W. C. S. Tai, L. Chen, D. K. Banfield
Glycosyltransferase enzymes stay in the Golgi in the face of
continuing membrane traffic because a receptor links their
cytoplasmic tails to a recycling coated vesicle.

IMMUNOLOGY

Anomalous Type 17 Response to Viral Infection by CD8+ T Cells Lacking T-bet and Eomesodermin
A. M. Intlekofer et al.
Two transcription factors cooperate to ensure the correct functioning of CD8+ T cells during the response to infection.

CELL SIGNALING

Riboswitches in Eubacteria Sense the Second
Messenger Cyclic Di-GMP
N. Sudarsan et al.
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.

NEUROSCIENCE

Bottom-Up Dependent Gating of Frontal Signals in Early Visual Cortex
L. B. Ekstrom et al.
Higher brain centers can modulate activity in the cortical regions that
directly receive visual input, but only when a visual stimulus is present.

EVOLUTION

The Evolution and Distribution of Species Body Size
A. Clauset and D. H. Erwin
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.

CELL BIOLOGY

Four-jointed Is a Golgi Kinase That Phosphorylates
a Subset of Cadherin Domains
H. O. Ishikawa et al.
A newly described type of protein kinase found in the Golgi
phosphorylates signaling proteins on amino acids that are destined
to be within extracellular domains.

Let’s explore how this document might look if it were a page from a book or a journal, while maintaining its natural flow and structure.
A new drug discovery paradigm focuses on identifying and targeting cellular elements of the host that are exploited by pathogens.

GLOSSARY
Find out what DILP, HRE, and OGT mean in the world of cell signaling.

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

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Tough Times for the Taz
Researchers debate the evolutionary impact of a deadly cancer in Tasmanian devils.

Answer to Carbon Emissions May Lie Under the Sea
Researchers propose injecting greenhouse gas near volcanic rock on the ocean bottom.

“Baby Boom” in a Stellar Nursery
Astronomers discover an ancient galactic star factory on overdrive.

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L. Malisheski
A visiting assistant professor position can be a step forward on some career paths.

D. Jensen
It may be time to shake things up with a career review.

A. Saini
Earthquake engineers study how to avoid seismic destruction.

J. Austin
We are looking for a few people with interesting things to say about their careers in science.

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