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Science

Programa de
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004

INTI-Extensión y Desarrollo
División Biblioteca

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 AAAS

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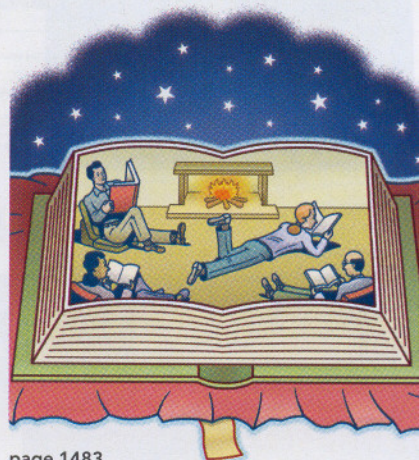
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COVER

Viewed from the inside of a fractured rice leaf, cells of the rice pathogenic bacterium *Xanthomonas oryzae* pv. *oryzicola* invade through a stoma. *Xanthomonas* species inject host cells with unusual DNA binding proteins called transcription activator–like (TAL) effectors to up-regulate genes important for infection. Two studies in this issue (pages 1501 and 1509; related Perspective, page 1491) decipher TAL effector target specificity and show that new specificities can be engineered.

Image: Adam Bogdanove and Harry Horner/Iowa State University;
false color: Yael Kats/Science

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- 1501 A Simple Cipher Governs DNA Recognition by TAL Effectors**
M. J. Moscou and A. J. Bogdanove
Xanthomonas bacteria use an amino acid–based code to target effector molecules to specific DNA sequences.
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- 1502 Cell-Specific Information Processing in Segregating Populations of Eph Receptor Ephrin–Expressing Cells**
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A proteomic strategy elucidates signaling networks between cells communicating through ephrin proteins and their receptors.
- 1509 Breaking the Code of DNA Binding Specificity of TAL-Type III Effectors**
J. Boch et al.
Artificial effectors with new specificities have been constructed that mimic proteins injected into plant cells by pathogens.
>> *Perspective p. 1491*; *Brevia p. 1501*

REPORTS

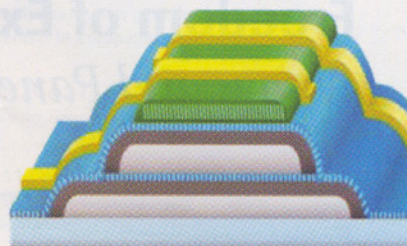
- 1512 Modulated High-Energy Gamma-Ray Emission from the Microquasar Cygnus X-3**
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- 1516 Organic Nonvolatile Memory Transistors for Flexible Sensor Arrays**
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- 1525 Evolution of Organic Aerosols in the Atmosphere**
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- 1541 Mapping Human Genetic Diversity in Asia**
The HUGO Pan-Asian SNP Consortium
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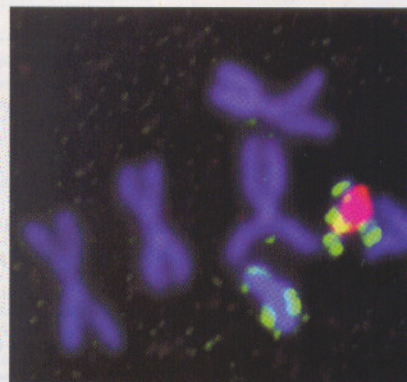
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Adaptive Evolution of Pelvic Reduction in Sticklebacks by Recurrent Deletion of a *Pitx1* Enhancer

Y. F. Chan et al.

Loss of a tissue-specific enhancer explains multiple parallel losses of the pelvic girdle in stickleback populations.

10.1126/science.1182213

Tuberculous Granuloma Induction via Interaction of a Bacterial Secreted Protein with Host Epithelium

H. E. Volkman et al.

Epithelial cells play a role in tubercular granuloma formation and mycobacterial virulence.

10.1126/science.1179663

Global Analysis of Short RNAs Reveals Widespread Promoter-Proximal Stalling and Arrest of Pol II in *Drosophila*

S. Nechaev et al.

The initially transcribed sequence plays a key role in inducing polymerase stalling.

10.1126/science.1181421

Iapetus: Unique Surface Properties and a Global Color Dichotomy from Cassini Imaging

T. Denk et al.

10.1126/science.1177088

Formation of Iapetus' Extreme Albedo Dichotomy by Exogenically Triggered Thermal Ice Migration

J. R. Spencer and T. Denk

Thermal migration of water ice explains the observed color asymmetry of Saturn's unusual moon, Iapetus.

10.1126/science.1177132

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Lose Genes, Gain Weight

Some obese patients are missing a chunk of one of their chromosomes.

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Primates produce new alarm calls in a way that might resemble human language.

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RESEARCH ARTICLE: Only a Subset of Met-Activated Pathways Are Required to Sustain Oncogene Addiction

A. Bertotti et al.

Cells addicted to different oncogenic receptor tyrosine kinases develop common downstream mechanisms to sustain malignancy.

RESEARCH ARTICLE: Delivery of microRNA-126 by Apoptotic Bodies Induces CXCL12-Dependent Vascular Protection

A. Zerneck et al.

Apoptotic endothelial cells release microRNA-containing microvesicles to modulate the responses of neighboring cells and reduce atherosclerosis in mice.

REVIEW: Cracking the Phosphatase Code: Docking Interactions Determine Substrate Specificity

J. Roy and M. S. Cyert

Studies of the motifs that guide interactions between phosphatases and cellular proteins provide insight into phosphatase selectivity.

JOURNAL CLUB: To Be $\gamma\delta$ or Not to Be $\gamma\delta$? Signaling Pathways in $\alpha\beta$ Versus $\gamma\delta$ T Cell Maturation

J. K. Archbold

The role of Notch signaling in human T cell maturation is substantially different from that in the mouse.

NETWATCH: Domain Club Browser

Proteomic analysis organizes proteins into domain clubs that share similar domain composition; in Protein Databases.

NETWATCH: SMART (Simple Modular Architecture Research Tool)

Explore protein domains and compare domain architecture; in Protein Databases.

SCIENCE CAREERS

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Dealing With a Lab Leader's Death

S. Coelha

The death of a principal investigator leaves behind a scientific gap, practical problems, and grieving colleagues.

A Killer Whale Biologist Vocalizes

V. Venkatraman

Ari Daniel Shapiro is leaving scientific research to produce radio programs about science and the people who do science.

In Person: A Dream Lab in Romania

T. Luchian

1989 was a momentous year for Romania, but it was not until the mid-2000s that Tudor Luchian found resources to establish a cutting-edge lab at home.

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PERSPECTIVE: Parallel Paths to Predictive Biomarkers in Oncology—Uncoupling of Emergent Biomarker Development and Phase III Trial Execution

R. Sikorski and B. Yao

Predictive biomarkers can be integrated into phase III clinical trials by a variety of approaches.

COMMENTARY: Traversing the Valley of Death—A Guide to Assessing Prospects for Translational Success

B. S. Collier and R. M. Califf

Rigorous methods are required to move basic science into effective therapies.

RESEARCH ARTICLE: A Role for VAV1 in Experimental Autoimmune Encephalomyelitis and Multiple Sclerosis

M. Jagodic et al.

Rat genetics implicates a new gene in the etiology of multiple sclerosis in European populations.

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A History of Beginnings

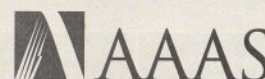
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