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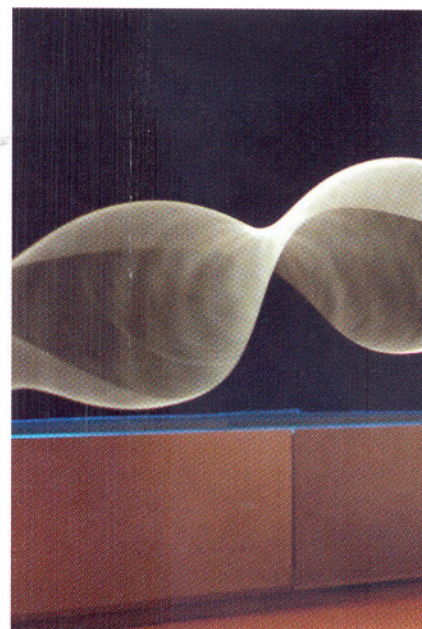
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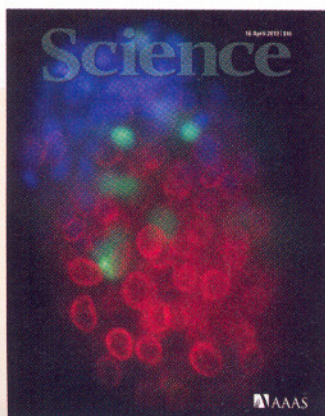
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COVER

Fluorescence microscopy image showing fragmentation of chromosomal DNA (green) during programmed cell death or apoptosis in a *Caenorhabditis elegans* embryo. Chromosomes are stained blue and nuclear envelopes red. During apoptosis, the ribonuclease Dicer, known for its role in gene silencing, is converted to a deoxyribonuclease and initiates this DNA fragmentation process. See page 327.

Image: Jay Parrish/University of Colorado

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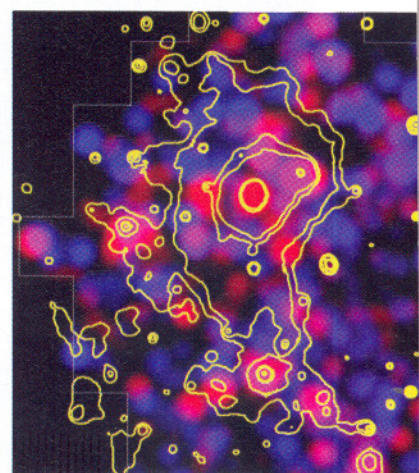
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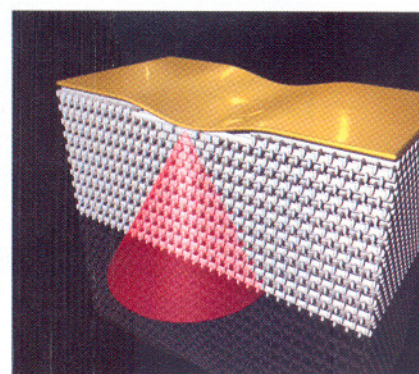
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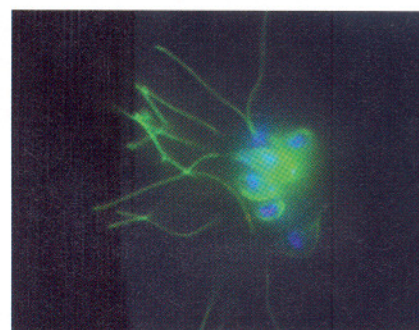
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SCIENCEONLINE

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pH Sensing by Intracellular *Salmonella* Induces Effector Translocation

X.-J. Yu et al.

Intravacuolar *Salmonella* senses host cytosolic pH, resulting in degradation of a regulatory complex and effector translocation.

10.1126/science.1189000

Genome-Wide Evolutionary Analysis of Eukaryotic DNA Methylation

A. Zemach et al.

Analysis of DNA methylation in 17 species suggests a path for the evolution of this epigenetic mark.

10.1126/science.1186366

Structural Insights into the Assembly and Function of the SAGA Deubiquitinating Module

N. L. Samara et al.

Structures give insight into how a regulator of eukaryotic gene expression achieves one of its chromatin-modifying functions.

10.1126/science.1190049

The Equation of State of a Low-Temperature Fermi Gas with Tunable Interactions

N. Navon et al.

A Fermi gas is characterized along the crossover regime between its weak and strongly interacting limits.

10.1126/science.1187582

Lopsided Growth of Earth's Inner Core

M. Monnereau et al.

The asymmetry of the inner core is explained by iron crystallization on one side and melting on the other.

10.1126/science.1186212

Regional Variation of Inner-Core Anisotropy from Seismic Normal-Mode Observations

A. Deuss et al.

Seismic data from the inner core reveal that anisotropic regions overlap with gravitational anomalies.

10.1126/science.1188596

TECHNICALCOMMENTS

Comment on "Modafinil Shifts Human Locus Coeruleus to Low-Tonic, High-Phasic Activity During Functional MRI" and "Homeostatic Sleep Pressure and Responses to Sustained Attention in the Suprachiasmatic Area"

S. V. Astafiev et al.

full text at www.sciencemag.org/cgi/content/full/328/5976/309-a

Response to Comment on "Modafinil Shifts Human Locus Coeruleus to Low-Tonic, High-Phasic Activity During Functional MRI"

M. J. Minzenberg et al.

full text at www.sciencemag.org/cgi/content/full/328/5976/309-b

Response to Comment on "Homeostatic Sleep Pressure and Responses to Sustained Attention in the Suprachiasmatic Area"

C. Schmidt et al.

full text at www.sciencemag.org/cgi/content/full/328/5976/309-c

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RESEARCH ARTICLE: Identification of the *miR-106b-25* microRNA Cluster as a Proto-Oncogenic *PTEN*-Targeting Intron That Cooperates with its Host Gene *MCM7* in Transformation

L. Poliseno et al.

A microRNA network regulates the tumor suppressor *PTEN* in prostate cancer.

PERSPECTIVE: Not Lost in Space—Trafficking in the Hedgehog Signaling Pathway

L. Milenkovic and M. P. Scott

Protein kinase A orchestrates Hedgehog signaling from the base of the primary cilium.

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Conventions of Scientific Authorship

V. Venkatraman

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E. Pain

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D. Jensen

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PERSPECTIVE: Optimal Control of Blood Glucose—The Diabetic Patient or the Machine?

L. Brown and E. R. Edelman

Diabetic patients may benefit from a device that uses a computer algorithm to deliver proper amounts of insulin and glucagon.

PERSPECTIVE: Challenges in Using Stem Cells for Cardiac Repair

C. L. Mummery et al.

Stem cell-derived cardiomyocytes offer promise for treating damage caused by heart attacks.

RESEARCH: A Bi-Hormonal Closed-Loop Artificial Pancreas for Type 1 Diabetes

F. H. El-Khatib et al.

An algorithm continuously delivers appropriate insulin and glucagon doses to diabetic patients, maintaining their blood glucose at normal values, even after high-carbohydrate meals.

REVIEW: Exploring New Routes for Neuroprotective Drug Development in Traumatic Brain Injury

T. Janowitz and D. K. Menon

The methods and devices used in the clinical management of neurological patients can provide data to facilitate progress in treating brain trauma.

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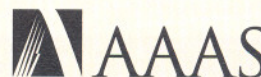
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The Gonzo Scientist travels to Senegal with an astrophysicist to deliver the universe to remote villagers.

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