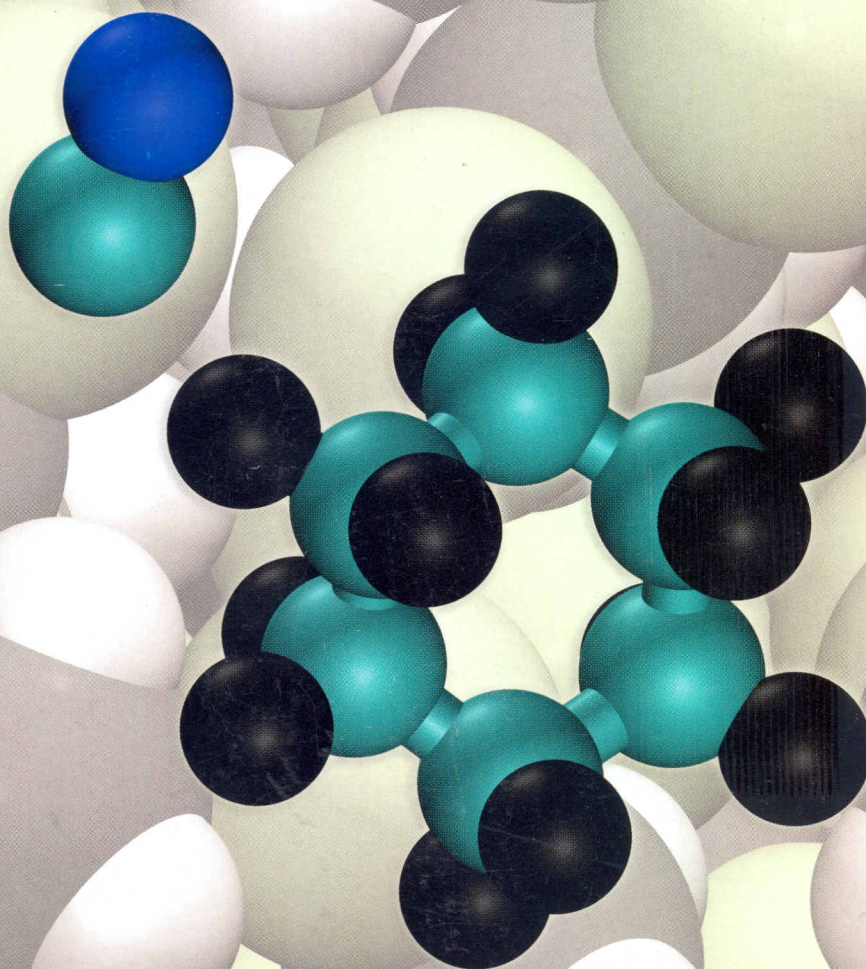


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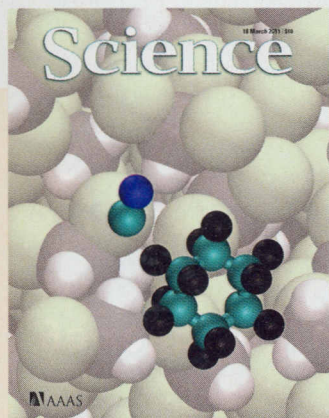
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COVER

Reaction of a CN radical with cyclohexane (ball-and-stick structures in green-blue and green-black, respectively) in dichloromethane solvent (space-filling representation). Observations of this reaction on the time scale of picoseconds reveal a wealth of information about the chemical mechanism and shed light on how solvents widely used in chemical synthesis influence reactions on a molecular scale. See page 1423.

Image: David R. Glowacki/School of Chemistry, University of Bristol

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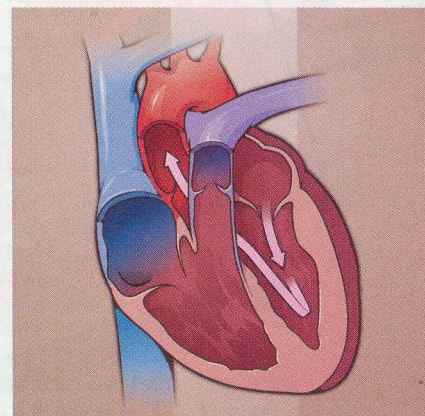
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- 1409** CRYPTOCHROME Is a Blue-Light Sensor That Regulates Neuronal Firing Rate
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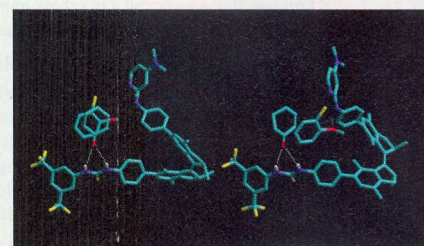
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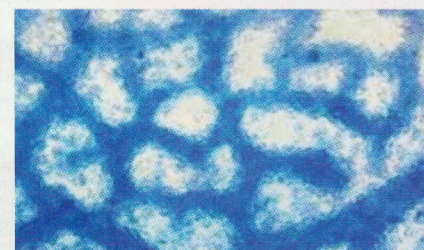
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The Hot Summer of 2010: Redrawing the Temperature Record Map of Europe

D. Barriopedro et al.

Large parts of Eastern Europe experienced exceptional warmth during the summer of 2010.
10.1126/science.1201224

Kepler-Detected Gravity-Mode Period Spacings in a Red Giant Star

P. G. Beck et al.

Asteroseismic observations with the Kepler satellite probed the deep interior of an evolved star.
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A Radically Different Mechanism for S-Adenosylmethionine-Dependent Methyltransferases

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Methylation of the bacterial ribosome by two methyltransferases proceeds by an unusual radical mechanism.
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Amino acid modulation of Ca²⁺ signaling guides growth of plant pollen tubes.
10.1126/science.1201101

Mammalian Genes Are Transcribed with Widely Different Bursting Kinetics

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Real-time monitoring of gene expression reveals transcription kinetics of mammalian genes.
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TECHNICAL COMMENTS

Comment on "Does the Hydrated Electron Occupy a Cavity?"

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Full text at www.sciencemag.org/cgi/content/full/331/6023/1387-c

Comment on "Does the Hydrated Electron Occupy a Cavity?"

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Full text at www.sciencemag.org/cgi/content/full/331/6023/1387-e

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Gut bacteria may be an important factor in the response to starvation.
<http://scim.ag/gut-nutrition>

Microbes Give Mice Intestinal Fortitude
Gut bacteria help mice survive potentially lethal infections.
<http://scim.ag/gut-resist>

Brain Scanner as Accessory

A new PET imager can scan rats' brains while they run around.
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SCIENCE SIGNALING

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The Signal Transduction Knowledge Environment
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RESEARCH ARTICLE: LRP6 Mediates cAMP Generation by G Protein-Coupled Receptors by Regulating the Membrane Targeting of G α_s
M. Wan et al.
The receptor LRP6 associates G α_s to promote cAMP signaling by various GPCRs.

RESEARCH RESOURCE: Engineering the ABA Plant Stress Pathway for Regulation of Induced Proximity
F.-S. Liang et al.

PERSPECTIVE: Inducible Gene Expression in Mammals—Plants Add to the Menu
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The plant abscisic acid signaling components can be leveraged to inducibly control protein interactions in mammals.

RESEARCH RESOURCE: System-Wide Temporal Characterization of the Proteome and Phosphoproteome of Human Embryonic Stem Cell Differentiation
K. T. G. Rigbolt et al.

Dynamic phosphorylation during stem cell differentiation may control recruitment of DNA methyltransferases to silence genes that maintain pluripotency.

PODCAST

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A protein required for light sensation also plays a role in thermosensing in the fruit fly.

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Tooling Up: Making the Cut in 2011
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In a job market where even entry-level jobs are going to people with industry experience, how can you compete?
<http://scim.ag/toolingup2011>

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<http://scim.ag/huntingghosts>

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Integrating Medicine and Science

16 March issue: <http://scim.ag/stm031611>

COMMENTARY: How Inclusion of Genetic Counselors on the Research Team Can Benefit Translational Science

H. Zierhut and J. Austin

Genetic counselors could help recruit study participants and bring a more clinical focus to translational studies.

RESEARCH ARTICLE: CD40 Pathway Activation Status Predicts Response to CD40 Therapy in Diffuse Large B Cell Lymphoma

B. Burlington et al.

A 15-gene expression signature predicts whether a patient with non-Hodgkin's lymphoma will respond to dacetuzumab, a therapeutic antibody.

RESEARCH ARTICLE: β -Arrestin Deficiency Protects Against Pulmonary Fibrosis in Mice and Prevents Fibroblast Invasion of Extracellular Matrix

A. K. Lovgren et al.

The signaling molecule β -arrestin is required for the fibroblast invasion of extracellular matrix and thus for the development of pulmonary fibrosis.

RESEARCH ARTICLE: The Δ DF508 Mutation Causes CFTR Misprocessing and Cystic Fibrosis-Like Disease in Pigs

L. S. Ostedgaard et al.

A common mutation in human cystic fibrosis, CFTR- Δ DF508, results in misprocessed CFTR and a cystic fibrosis-like clinical phenotype in pigs.

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