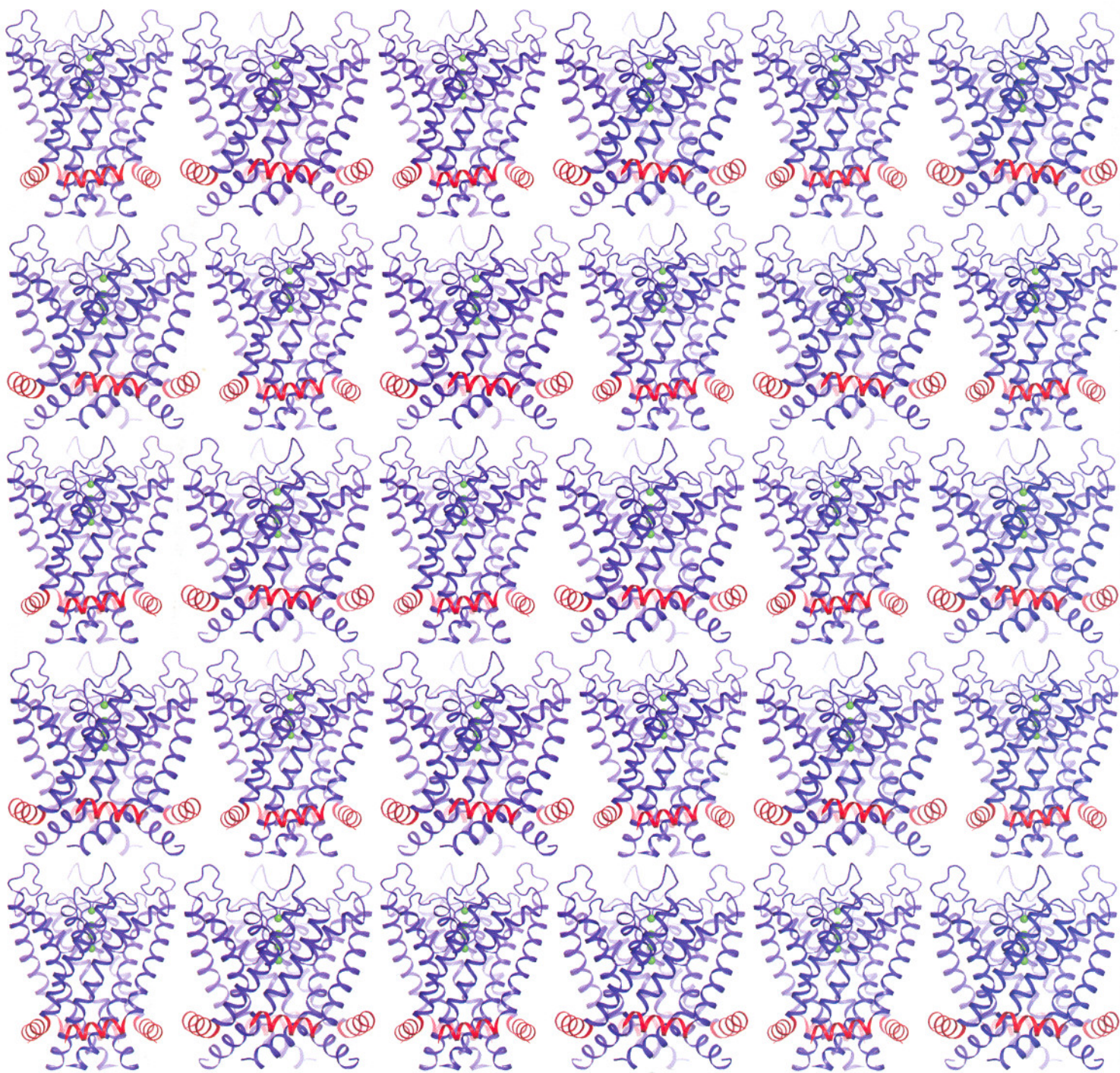


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# Science



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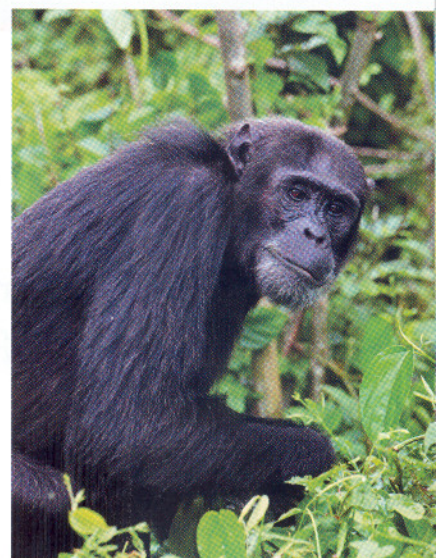
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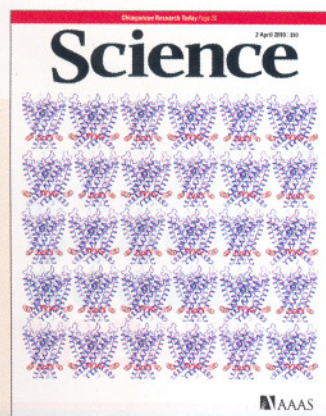
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## COVER

An array of alternating open and closed potassium channel pores. A Research Article on page 67 describes a mechanism by which cell membrane voltage, through the action of protein voltage sensors, controls ion channel opening and closing to produce electrical impulses in the nervous system.

Credit: Xiao Tao, Rockefeller University

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Cytomegalovirus monkeys can reinfect an already-infected host by evading the CD8<sup>+</sup> T cell-mediated immune response.

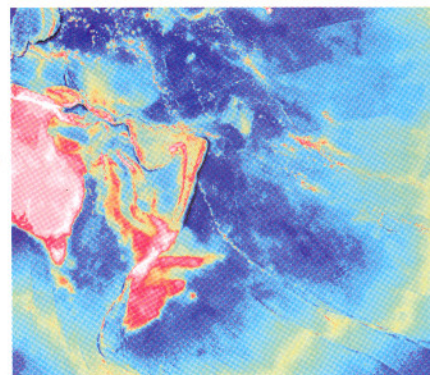
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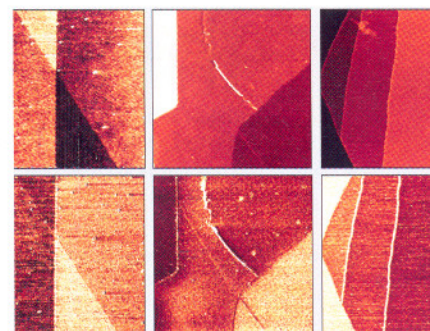
*H.-P. Wang et al.*

Synchronous synaptic inputs from a very small number of thalamic neurons can be strong enough to activate cortical neurons.

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## SCIENCEONLINE

## SCIENCEEXPRESS

[www.sciencexpress.org](http://www.sciencexpress.org)

**Fermi Gamma-Ray Imaging of a Radio Galaxy**  
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Gamma rays from a radio galaxy are relic cosmic microwave background radiation that underwent inverse Compton scattering.  
10.1126/science.1184656

**Onset of Convective Rainfall During Gradual Late Miocene Rise of the Central Andes**

*C. J. Poulsen et al.*

Increased precipitation, rather than rapid uplift, drove isotopic changes in soil carbonates of the Andes in the late Miocene.  
10.1126/science.1185078

**Systematic Analysis of Human Protein Complexes Identifies Chromosome Segregation Proteins**

*J. R. A. Hutchins et al.*

A strategy designed to decipher the function of proteins identified in RNA interference screens reveals new insights into mitosis.  
10.1126/science.1181348

## SCIENCENOW

[www.sciencenow.org](http://www.sciencenow.org)

**Highlights From Our Daily News Coverage**

**Murder or an Accident? The Brain Knows**

Researchers finger region of the brain that helps us evaluate the intentions of others.

**Toward Liquid-Cooled Computers**

Superwicking technique improves cooling efficiency of silicon chips.

**Engineers Create First Motion-Powered Nanodevice**

Devices could power new generation of tiny electronics.

## SCIENCESIGNALING

[www.sciencesignaling.org](http://www.sciencesignaling.org)

**The Signal Transduction Knowledge Environment**

**RESEARCH ARTICLE: Differential Redox Regulation of ORAI Ion Channels—A Mechanism to Tune Cellular Calcium Signaling**

*I. Bogaeski et al.*

Redox sensitivity of T cells decreases through ORAI Ca<sup>2+</sup> channel subunit switching during T cell differentiation.

**RESEARCH ARTICLE: New Roles for the LKB1-NUAK Pathway in Controlling Myosin Phosphatase Complexes and Cell Adhesion**  
*A. Zagórska et al.*

## PODCAST

*D. R. Alessi and A. M. VanHook*

The tumor suppressor LKB1 not only keeps cell proliferation in check but also modulates cell adhesion.

**PERSPECTIVE: GPCR Dimers Fall Apart**

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Oligomers of G protein-coupled receptors may be less stable than previously suspected.

**REVIEW: The Role of the Kinases RIP1 and RIP3 in TNF-Induced Necrosis**

*P. Vandenabeele et al.*

Programmed necrosis in response to TNF requires the activity of two serine-threonine kinases.

## SCIENCECAREERS

[www.sciencereers.org/career\\_magazine](http://www.sciencereers.org/career_magazine)

**Free Career Resources for Scientists**

**SPECIAL FEATURE: TECHNOLOGIES ASSISTING SCIENTISTS AND ENGINEERS**

**Assistive Technologies Enable Discovery**

*S. Carpenter*

Like a microscope, assistive technologies allow scientists and engineers to extend their capabilities.

**Profiles in Technological Adaptation**

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With assists from technology, these scientists and engineers are getting their work done.

**Taken for Granted: Trying to Account for Tastes**

*B. L. Benderly*

Research finds that scientists' career preferences are far wider than stereotypes suggest.

## SCIENCE TRANSLATIONAL MEDICINE

[www.sciencetranslationalmedicine.org](http://www.sciencetranslationalmedicine.org)

**Integrating Medicine and Science**

**PERSPECTIVE: Toward an Oligonucleotide Therapy for Duchenne Muscular Dystrophy—A Complex Development Challenge**

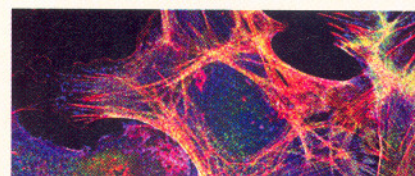
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By correcting the reading frame in mutant DMD genes, antisense oligonucleotides can restore the production of missing dystrophin protein.

**COMMENTARY: Complexity in Common Diseases—Big Biology for All**

*J. R. Lamb and N. Gibson*

Discovery of diagnostic tools and treatments for common human diseases requires integrating research in academic and industrial institutions.



**SCIENCESIGNALING**  
Controlling cell adhesion.

**RESEARCH ARTICLE: Plasmacytoid Dendritic Cells Delineate Immunogenicity of Influenza Vaccine Subtypes**

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Rare, circulating dendritic cells differentially shape the immunogenicity mechanisms for protection against H1N1 influenza.

**RESEARCH ARTICLE: Microfluidic Isolation and Molecular Characterization of Circulating Tumor Cells from Patients with Localized and Metastatic Prostate Cancer**

*S. Stott et al.*

Automated imaging of prostate-specific cancer cells from the blood provides a measure of circulating tumor cell half-life after tumor resection.

## SCIENCEPODCAST

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