The dynamic nature of the master calcium signaling protein, calmodulin, schematically illustrated by snapshots from an interpolation between its calcium-bound state (blue) and its structure bound to both calcium and a peptide derived from one of its downstream cellular targets, myosin light chain kinase (red), generated using the Yale Morph Server and PyMol software. See the special section beginning on page 197.

Image: Robert Smock and Lila Gierasch
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217 Exomic Sequencing Identifies PALB2 as a Pancreatic Cancer Susceptibility Gene
S. Jones et al.
Mutations in a gene previously implicated in breast cancer are a contributing factor in hereditary pancreatic cancer.

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218 Genome-Wide Analysis in Vivo of Translation with Nucleotide Resolution Using Ribosome Profiling
N. T. Ingolia et al.
Profiling the position of ribosomes on messenger RNA allows rapid, high-precision investigation of cellular protein translation.

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H. Marquardt et al.
A minor phase of the deep mantle causes marked differences in seismic travel times in different directions.

226 A Great Earthquake Rupture Across a Rapidly Evolving Three-Plate Boundary
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J. Tersoff et al.
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J. Kim et al.
The key step in the synthesis of this complex fungal metabolite replaces four introduced hydroxyl groups with thiols.

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L. Ashall et al.
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255 Coding-Sequence Determinants of Gene Expression in Escherichia coli
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258 Leucine-Rich Repeat Protein Complex Activates Mosquito Complement in Defense Against Plasmodium Parasites
M. Povelones et al.
A family of molecules, apparently unique to mosquitoes, binds to invading parasites and initiates innate immune responses.

261 Glioma-Derived Mutations in IDH1 Dominantly Inhibit IDH1 Catalytic Activity and Induce HIF-1α
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265 Demonstration of Genetic Exchange During Cyclical Development of Leishmania in the Sand Fly Vector
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Diversity among Leishmania parasites is not just a product of divergent mutation but also of genetic exchange.

268 Green Evolution and Dynamic Adaptations Revealed by Genomes of the Marine Picoeukaryotes Micromonas
A. Z. Worden et al.
An anciently derived clade of photosynthetic picoeukaryote, ubiquitous in the world’s oceans, possesses surprising genetic diversity.
Development of a Second-Generation Antiandrogen for Treatment of Advanced Prostate Cancer

C. Tran et al.

A drug that binds to the androgen receptor acts by disrupting its activity in the cell nucleus.

10.1126/science.1168175

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Cell Movements at Hensen’s Node

Establish Left/Right Asymmetric Gene Expression in the Chick

J. Gros et al.

Asymmetric gene expression is passively set up in the early chick embryo by cell rearrangements.

10.1126/science.1168996

Perspective: Partitioning the Synaptic Landscape—Distinct Microdomains for Spontaneous and Spike-Triggered Neurotransmission

M. A. Sutton and E. M. Schuman

Spontaneous and evoked release of glutamate activates distinct NMDA receptor pools.

Perspective: Bxx Shines a Light on the Route from Hyperosmolarity to NFAT5

J. Aramburu and C. López-Rodríguez

The guanine nucleotide exchange factor Brx mediates an early event in lymphocytes exposed to osmotic stress.

Podcast

B. D. Manning and A. M. VanHook

The sets of kinases required by different cancer cell lines are highly divergent.

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Activation of a synaptic microdomain.