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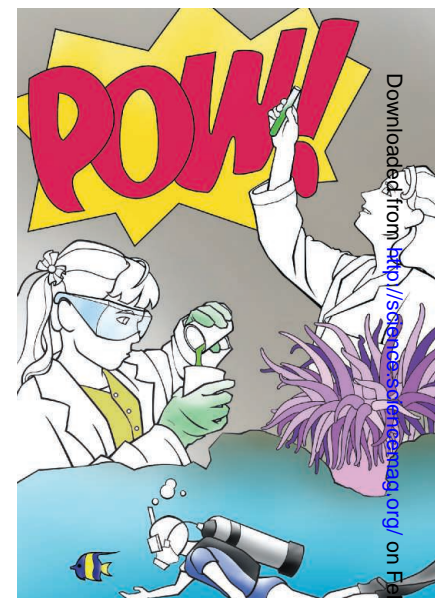
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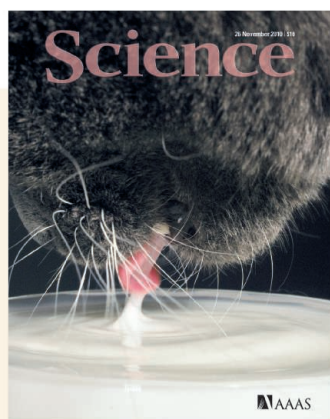


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COVER

A domestic cat (*Felis catus*) laps milk by lowering its tongue to touch the liquid surface and then rapidly pulling it up, creating a liquid column, the top of which the animal captures in its mouth before gravity draws it down. Measurements of lapping frequency in domestic and wild cats suggest that this mechanism is conserved among felines and that lapping frequency is tuned to maximize the ingested volume per lap. See page 1231.

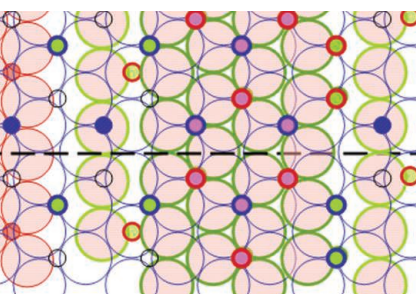
Photo: *Micaela Pilotto, Pedro Reis, Roman Stocker*

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- 1219 Modular Organic Structure-Directing Agents for the Synthesis of Zeolites
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Phosphazene molecules enable the synthesis of a rare naturally occurring zeolite.
- 1222 Renewable Chemical Commodity Feedstocks from Integrated Catalytic Processing of Pyrolysis Oils
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- 1227 The Core Structure of Basal Dislocations in Deformed Sapphire ($\alpha\text{-Al}_2\text{O}_3$)
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Cassini Finds an Oxygen–Carbon Dioxide Atmosphere at Saturn’s Icy Moon Rhea

B. D. Teolis et al.

Rhea’s atmosphere is maintained by chemical decomposition of surface water ice under irradiation from Saturn’s magnetosphere.

10.1126/science.1198366

Oxygen Doping Modifies Near-Infrared Band Gaps in Fluorescent Single-Walled Carbon Nanotubes

S. Ghosh et al.

Contrast can be improved in bioimaging applications by separating the emission and absorption wavelengths.

10.1126/science.1196382

Siah Regulation of Pard3A Controls Neuronal Cell Adhesion During Germinal Zone Exit

J. K. Famulski et al.

A ubiquitination cascade regulates formation of cell adhesions that immature neurons require in the developing mouse brain.

10.1126/science.1198480

The Cellular and Physiological Mechanism of Wing-Body Scaling in *Manduca sexta*

H. F. Nijhout and L. W. Grunert

The central nervous system and the hormone ecdysone govern wing-size scaling in the tobacco hornworm.

10.1126/science.1197292

Structural Basis of Biological N₂O Generation by Bacterial Nitric Oxide Reductase

T. Hino et al.

A structural comparison gives insight into the features that allow conversion between nitric oxide and oxygen reduction.

10.1126/science.1195591

SCIENCE NOW

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Highlights From Our Daily News Coverage

Large Size Didn’t Keep Pterosaurs Grounded

Group argues that ancient reptiles flew just fine, despite their massive weight.

Evolutionary Relationships Hold, Even in Our Guts

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Stars born with the Sun may be dispersed far and wide in the Milky Way.

SCIENCE SIGNALING

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RESEARCH ARTICLE: BRAF Gene Amplification Can Promote Acquired Resistance to MEK Inhibitors in Cancer Cells Harboring the BRAF V600E Mutation

R. B. Corcoran et al.

Amplification of an upstream gene leads to resistance to cancer drugs targeted downstream.

RESEARCH ARTICLE: HLA Class I Molecules Partner with Integrin β_4 to Stimulate Endothelial Cell Proliferation and Migration

X. Zhang et al.

PODCAST

E. F. Reed and A. M. VanHook

Interactions between human leukocyte antigen I and the integrin β_4 subunit may contribute to transplant rejection.

PERSPECTIVE: Cyclic-di-GMP Reaches Out into the Bacterial RNA World

R. Hengge

A bacterial second messenger regulates mRNA translation by altering the cleavage of a self-splicing intron.

SCIENCE CAREERS

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Free Career Resources for Scientists

Reducing the Impact of Negative Stereotypes on the Careers of Women and Minority Scientists

D. Grewal

Research suggests that negative stereotypes pose a serious obstacle to fostering diversity in the scientific workforce.

Residency 101 for Physician-Scientists

R. Lorenz

Future physician-scientists should ask three questions when choosing a residency: What field? What type of residency? Which program?

SCIENCE TRANSLATIONAL MEDICINE

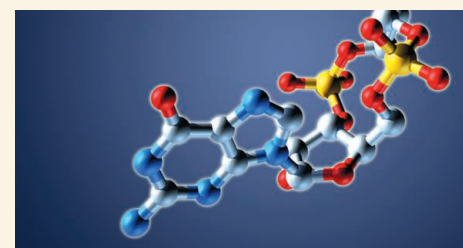
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Integrating Medicine and Science

PERSPECTIVE: Gaseotransmitters—New Frontiers for Translational Science

C. Szabo

Endogenous gaseous mediators offer therapeutic opportunities, as well as unexpected challenges for translational science.



SCIENCE SIGNALING

Cyclic-di-GMP, a bacterial second messenger.

RESEARCH ARTICLE: Adducin- and Ouabain-Related Gene Variants Predict the Antihypertensive Activity of Rostafuroxin. Part 1—Experimental Studies

M. Ferrandi et al.

RESEARCH ARTICLE: Adducin- and Ouabain-Related Gene Variants Predict the Antihypertensive Activity of Rostafuroxin. Part 2—Clinical Studies

C. Lanzani et al.

Genetic variants that affect Na,K-ATPase interactions predict the blood pressure response to an antihypertensive drug.

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Science Policy News and Analysis

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