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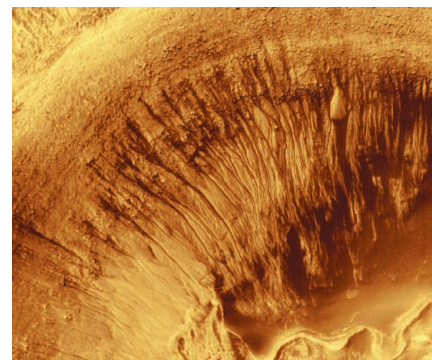
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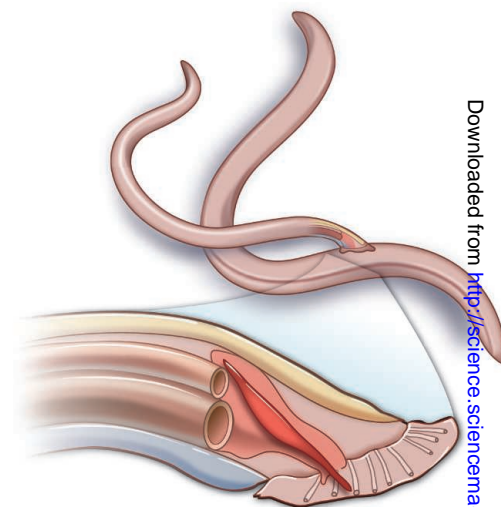
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COVER

False-colored scanning electron microscopy image of innate immune cells and the parasite *Trypanosoma brucei* (purple; length: 15 micrometers) in an infected mouse liver. The parasite is transmitted between mammalian hosts, including humans, by the bite of infected tsetse flies and is responsible for human sleeping sickness, a lethal disease that is a serious problem in Africa. See page 463.

Image: Gilles Vanwalleghem, Daniel Monteyne, Etienne Pays, and David Pérez-Morga, Laboratory of Molecular Parasitology and Center for Microscopy and Molecular Imaging, Université Libre de Bruxelles, Gosselies, Belgium

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- 477 **Human α -Defensin 6 Promotes Mucosal Innate Immunity Through Self-Assembled Peptide Nanonets**
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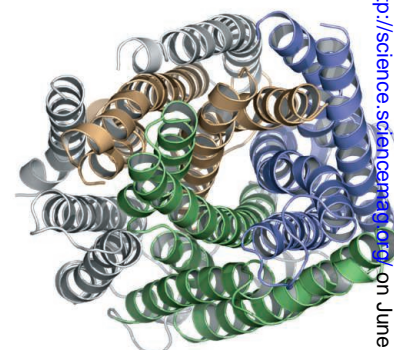
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UV Dosage Levels in Summer: Increased Risk of Ozone Loss from Convectively Injected Water Vapor

J. G. Anderson et al.

Convective injection of water vapor into the stratosphere increases the rate of ozone destruction there.

10.1126/science.1222978

A Mechanism of Extreme Growth and Reliable Signaling in Sexually Selected Ornaments and Weapons

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Rhinoceros beetle horns, a sexually selected weapon, are more sensitive to nutrition and reliably indicate male quality.

10.1126/science.1224286

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Identification of the Cdc48•20S Proteasome as an Ancient AAA+ Proteolytic Machine

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The AAA+ enzyme Cdc48 combines with the 20S peptidase to function as an alternative type of proteasome.

10.1126/science.1224352

Compartmentalized Control of Skin Immunity by Resident Commensals

S. Naik et al.

The skin microbiota plays a selective role in modulating immunity in the skin of mice.

10.1126/science.1225152

Transforming Fusions of *FGFR* and *TACC* Genes in Human Glioblastoma

D. Singh et al.

A fusion gene detected in a small subset of human brain tumors encodes a potentially druggable target.

10.1126/science.1220834

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Highlights From Our Daily News Coverage

Bats Catch Mating Flies in the Act

A study reveals that bats home in on noises made by copulating flies.

<http://scim.ag/Mating-Flies>

Selfish Sheep Seek the Center

GPS tracking provides evidence to back up biology's selfish herd theory.

<http://scim.ag/Selfish-Sheep>

Artificial Jellyfish Swims Like the Real Thing

Cell-silicone hybrid may inform the design of replacement hearts.

<http://scim.ag/Artificial-Jellyfish>

SCIENCE SIGNALING

www.sciencesignaling.org

The Signal Transduction Knowledge Environment
24 July issue: <http://scim.ag/ss072412>

RESEARCH ARTICLE: p53 Functions in Endothelial Cells to Prevent Radiation-Induced Myocardial Injury in Mice

C.-L. Lee et al.

PODCAST

D. G. Kirsch et al.

The transcription factor p53 protects the heart from radiation-induced damage.

RESEARCH ARTICLE: Distinct Spatial and Molecular Features of Notch Pathway Assembly in Regulatory T Cells

L. R. Perumalsamy et al.

PERSPECTIVE: Notch and the Survival of Regulatory T Cells—Location Is Everything!

L. M. Minter and B. A. Osborne

A cytosolic function of Notch helps regulatory T cells survive.

GLOSSARY

Find out what CTK, Rag, and Rheb mean in the world of cell signaling.

EVENTS

Plan to attend a signaling-relevant meeting, with more than 30 new meetings and conferences added in July.

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Integrating Medicine and Science

25 July issue: <http://scim.ag/stm072512>

FOCUS: In the Public Interest?

L. C. Sayres et al.

Restrictive patenting and licensing for cell-free fetal DNA testing has serious consequences for technology advances and benefits to public health.

RESEARCH ARTICLE: MHC-Resident Variation Affects Risks After Unrelated Donor Hematopoietic Cell Transplantation

E. W. Petersdorf et al.

The success of HLA-matched unrelated donor hematopoietic cell transplantation depends on non-HLA MHC region genetic variation.

RESEARCH ARTICLE: Temsirolimus Activates Autophagy and Ameliorates Cardiomyopathy Caused by Lamin A/C Gene Mutation

J. C. Choi et al.

Cardiomyopathy arising from lamin A/C mutations in mice can be corrected by enhancing autophagy through blockade of mTOR with temsirolimus.

RESEARCH ARTICLE: Rapamycin Reverses Elevated mTORC1 Signaling in Lamin A/C–Deficient Mice, Rescues Cardiac and Skeletal Muscle Function, and Extends Survival

F. J. Ramos et al.

Rapamycin treatment of a mouse model for a human laminopathy improves cardiac and muscle function, suggesting a therapy for human patients.

SCIENCE CAREERS

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Experimental Error: Help Not Wanted

A. Ruben

The United States faces a severe shortage of qualified scientists—so why are there so many unemployed scientists?

http://scim.ag/EE_NotWanted

Q&A: A Career on the Fence

E. Pain

A graduate school dean and former Olympic athlete reflects on science, fencing, and how the two activities have benefited each other.

<http://scim.ag/OnTheFence>

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Science Policy News and Analysis

SCIENCE (ISSN 0036-8075) is published weekly on Friday, except the last week in December, by the American Association for the Advancement of Science, 1200 New York Avenue, NW, Washington, DC 20005. Periodicals Mail postage (publication No. 484460) paid at Washington, DC, and additional mailing offices. Copyright © 2012 by the American Association for the Advancement of Science. The title SCIENCE is a registered trademark of the AAAS. Domestic individual membership and subscription (51 issues): \$149 (\$74 allocated to subscription). Domestic institutional subscription (51 issues): \$990; Foreign postage extra: Mexico, Caribbean (surface mail) \$55; other countries (air assist delivery) \$85. First class, airmail, student, and emeritus rates on request. Canadian rates with GST available upon request, GST #1254 88122. Publications Mail Agreement Number 1069624. Printed in the U.S.A.

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337 (6093)

Science **337** (6093), 388-488.

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