

COVER

A hot spring in Bali, Indonesia. The discovery of thriving microbial communities in such unexpected places has motivated investigation into the diversity and distribution of microbial life. The special issue beginning on page 1027 explores the microbial world.

Image: Sylvain Grandadam/Getty Images

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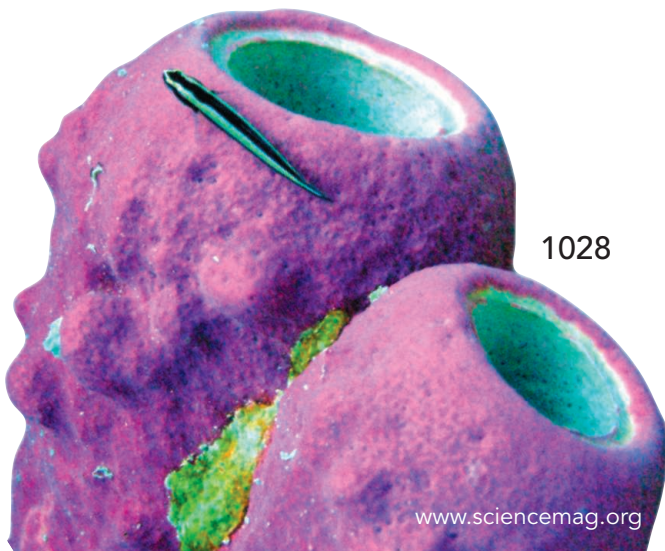


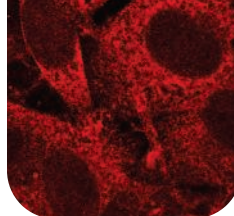
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SCIENCE EXPRESS

www.scienceexpress.org

CELL SIGNALING

The Rag GTPases Bind Raptor and Mediate Amino Acid Signaling to mTORC1

Y. Sancak et al.

Nutrients, specifically amino acids, are sensed by small guanosine triphosphatases, which bind to a signaling complex, moving it close to the nucleus where it initiates cell growth.

10.1126/science.1157535

MICROBIOLOGY

Evolution of Mammals and Their Gut Microbes

R. E. Ley et al.

Genomic sampling of the microbes in the feces of 60 mammals shows that herbivores harbor the most diversity and that individuals of the same species have the same flora.

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10.1126/science.1155725

CELL BIOLOGY

 β -Arrestin-Mediated Localization of Smoothed to the Primary Cilium

J. J. Kovacs et al.

β -arrestin, which has several known roles in signaling systems, also links a key receptor to a motor protein so that the receptor can be transported to cilia for sensing environmental cues.

10.1126/science.1157983

CLIMATE CHANGE

Evidence for Upwelling of Corrosive "Acidified" Water onto the Continental Shelf

R. A. Feely et al.

As a result of anthropogenic CO₂ uptake, corrosive seawater undersaturated with calcium carbonate shoaled on the continental shelf of western North America in 2007.

10.1126/science.1155676

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Extending the Sub-Sea-Floor Biosphere

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E. G. Roussel et al.

Prokaryotic cells and DNA from Archaea are present at depths greater than 1 kilometer in sediments below the ocean floor, where temperatures range up to 100° Celsius.



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CREDIT (BOTTOM IMAGE): NASA/JPL/CORNELL UNIVERSITY

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M. Benhar, M. T. Forrester, D. T. Hess, J. S. Stamler

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N. Bouatia-Naji et al.

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Genetically modified primates may be better than mice for studying neurological disorders.

Astronomers in a Spin About Mystery Pulsar

One of the universe's most extreme objects just got a bit stranger.

Catching a Climate Offender

New strategy could reduce CO₂ emissions from coal plants.



Telling the story of teamwork.

SCIENCE CAREERS

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FREE CAREER RESOURCES FOR SCIENTISTS

MiSciNet: Family Trailblazers

S. Gaidos

Fitting in on a college faculty is harder when you are the first in your family to go to college.

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Microbial Ecology

SCIENCE SIGNALING

www.sciencesignaling.org

THE SIGNAL TRANSDUCTION KNOWLEDGE ENVIRONMENT

EDITORIAL GUIDE: Focus Issue—A Niche of One's Own

E. M. Adler and J. F. Foley

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PERSPECTIVE: Diversification of the Function of Cell-to-Cell Signaling in Regulation of Virulence Within Plant Pathogenic Xanthomonads

M. Dow

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PERSPECTIVE: Bacterial-Modulated Signaling Pathways in Gut Homeostasis

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Stimulation of the production of reactive oxygen species in gut epithelial cells by commensal bacteria dampens the host immune response.

PERSPECTIVE: ETosis—A Novel Cell Death Pathway

F. Wartha and B. Henriques-Normark

Pathogenic microbes are trapped and killed by mast cell- and neutrophil-derived extracellular traps.

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