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Dendritic cells of the immune system recognize and bind bacteria and other microbes by means of receptors expressed on the dendritic cell membrane and within the cell, thus triggering an immune response. Microbial sensing is associated with the innate arm of the immune system, and recent developments in this area are described in the special section starting on page 283.

Image: Chris Bickel

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R. Temperley et al.
During translation of mitochondrial genes, shifting the ribosome reading frame avoids unconventional arginine codons.

RESEARCH ARTICLE

Adaptive Evolution of Pelvic Reduction in Sticklebacks by Recurrent Deletion of a Pitx1 Enhancer
Y. F. Chan et al.
Loss of a tissue-specific enhancer explains multiple parallel losses of the pelvic girdle in stickleback populations.

REPORTS

Direct Imaging of Bridged Twin Protoplanetary Disks in a Young Multiple Star
S. Mayama et al.
An infrared image taken with the Subaru Telescope reveals young binary stars and their circumstellar environments.

How the Shape of an H-Bonded Network Controls Proton-Coupled Water Activation in HONO Formation
R. A. Relph et al.
Vibrational spectroscopy uncovers the role of a surrounding water network in the mediating reaction of a solvated ion.

Electro catalytic CO₂ Conversion to Oxalate by a Copper Complex
R. Angamuthu et al.
A copper complex can reductively couple carbon dioxide, even in the presence of oxygen.

Ligand-Enabled Reactivity and Selectivity in a Synthetically Versatile Aryl C–H Olefination
D. H. Wang et al.
A palladium-based catalyst eliminates the need for halogenated compounds for the formation of carbon-carbon bonds.

Nanoporous Gold Catalysts for Selective Gas-Phase Oxidative Coupling of Methanol at Low Temperature
A. Wittstock et al.
Leaching of gold-silver alloys creates a highly active catalyst for partial oxidation reactions.

Large-Scale Controls of Methanogenesis Inferred from Methane and Gravity Spaceborne Data
A. A. Bloom et al.
Satellite measurements allow the strength of wetland emissions of methane to be determined.

Lower Predation Risk for Migratory Birds at High Latitudes
L. McKinnon et al.
Egg predation rates measured at artificial nests along a 3000-kilometer transect decrease northwards.

The Genetic Map of Artemisia annua L. Identifies Loci Affecting Yield of the Antimalarial Drug Artemisinin
I. A. Graham et al.
A linkage map for an important medicinal crop plant targets to breeding targets for enhancing drug production.

Tetrathiomolybdate Inhibits Copper Trafficking Proteins Through Metal Cluster Formation
H. M. Alvarez et al.
Complex formation between a copper chaperone and a metallo-drug prevents copper transfer to target enzymes.

Global Analysis of Short RNAs Reveals Widespread Promoter-Proximal Stalling and Arrest of Pol II in Drosophila
S. Nechaev et al.
The initially transcribed sequence plays a key role in inducing polymerase stalling.

Unidirectional Airflow in the Lungs of Alligators
C. G. Farmer and K. Sanders
Crocodilian and bird lungs share patterns of air flow, indicating a common evolutionary origin.

G Protein Subunit Gα13 Binds to Integrin αIIbβ3 and Mediates Integrin "Outside-In" Signaling
H. Gong et al.
Cell adhesion mediated by integrins is coupled to intracellular signaling by direct binding to G proteins.

Functional and Evolutionary Insights from the Genomes of Three Parasitoid Nasonia Species
The Nasonia Genome Working Group
The genomes of three parasitoid wasp species offer insights into speciation, insect evolution, and parasitoid biology.

Zebrafish Behavioral Profiling Links Drugs to Biological Targets and Rest/Wake Regulation
J. Rihel et al.
The effects of most neuroactive drugs are conserved and can be detected by behavioral screening.
RESEARCH ARTICLE: Quantitative Phosphoproteomics Reveals Widespread Full Phosphorylation Site Occupancy During Mitosis
J. V. Olsen et al.
Protein phosphorylation during the cell cycle may be an all-or-none process in many instances.

PERSPECTIVE: Cyclic Nucleotides Converge on Brown Adipose Tissue Differentiation
P. S. Amieux and G. S. McKnight
cGMP-mediated signaling pathways are required for the differentiation and function of brown adipocytes.

RESEARCH ARTICLE: Uncovering Residual Effects of Chronic Sleep Loss on Human Performance
D. A. Cohen et al.
Sleep loss may be lost forever.

RESEARCH ARTICLE: Intermittent Prophylaxis with Oral Truvada Protects Macaques from Rectal SHIV Infection
J. G. Garcia-Lerma et al.
Treating monkeys with an antiretroviral drug before and after exposure to SHIV provides protection against infection.

RESEARCH ARTICLE: Extensive Crosstalk Between O-GlcNAcylation and Phosphorylation Regulates Cytokinesis
Z. Wang et al.
Protein O-GlcNAcylation regulates cell division.

RESEARCH ARTICLE: Basal Release of ATP—An Autocrine-Paracrine Mechanism for Cell Regulation
R. Corrêda and P. A. Insel
Responses to ATP play an important role in regulating the signaling and function of a diverse array of cells and tissues.

SCIENCECAREERS
www.sciencemag.org/career_magazine
Free Career Resources for Scientists

Tenure-Track Jobs Remain Scarce
S. Carpenter
Although most universities have cut faculty hiring, a few are taking advantage of a rich applicant pool.

Tooling Up: What’s Your Mission?
D. Jensen
Your unique life philosophy is the cornerstone of your success and job satisfaction.

Science Careers Blog
Science Careers Staff
Get frequent advice, opinion, news, funding opportunities, and links to other career resources.

RESEARCH ARTICLE: Evolutionary Dynamics of Complex Networks of HIV Drug-Resistant Strains: The Case of San Francisco
R. J. Smith et al.
Modeling of data from the U.S. indicates the potential for an epidemic wave of antiretroviral-resistant HIV.

Effect of Ocean Acidification on Iron Availability to Marine Phytoplankton
D. Shi et al.
Ocean acidification caused by anthropogenic carbon dioxide is changing the chemistry and bioavailability of iron in seawater.

Deglacial Meltwater Pulse 1B and Younger Dryas Sea Levels Revisited with Boreholes at Tahiti
E. Bard et al.
A coral-based record of sea level from Tahiti defines changes in the rate of sea-level rise between 14,000 and 9000 years ago.

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Cytokinesis O-GlcNAcylation and Phosphorylation Regulates
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