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Science

The **Gut Microbiota**

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The Gut Microbiota

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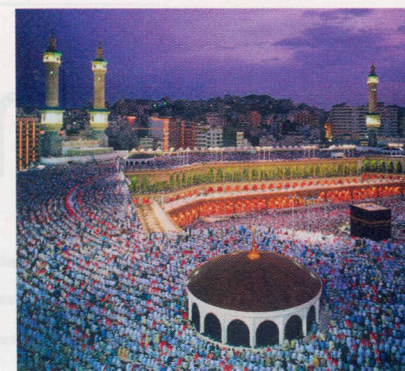
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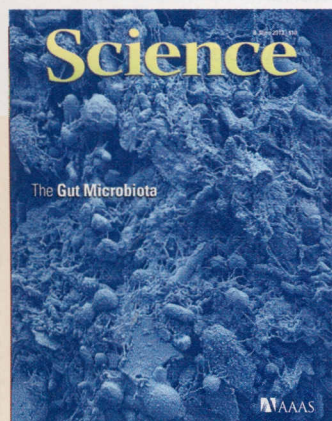
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COVER

Human intestinal bacteria (field-of-view width: ~11.4 μm). The human gut is teeming with symbiotic microbes that interact with their host to maintain health. A joint *Science* and *Science Translational Medicine* special section (see page 1245) explores advances in microbial ecology, microbial and host metabolisms, and interactions between gut microbes and the host immune system. Complementary articles discuss how to apply this knowledge to boost health and nutrition, combat infectious disease, and control noncommunicable diseases such as obesity and diabetes.

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- 1274** Crystal Structure of Human Enterovirus 71
P. Plevka et al.
The structure of a virus linked to neurological disease reveals how drugs targeting viruses in this family can be modified.

RESEARCH ARTICLE

- 1275** The Stomatopod Dactyl Club: A Formidable Damage-Tolerant Biological Hammer
J. C. Weaver et al.
The structure of mantis clubs is optimized to prevent complete failure caused by repetitive impacts.
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REPORTS

- 1280** Quantum Information Storage for over 180 s Using Donor Spins in a ^{28}Si "Semiconductor Vacuum"
M. Steger et al.
An almost isotopically pure sample of ^{28}Si provides a vacuumlike environment for ^{31}P qubits.
- 1283** Room-Temperature Quantum Bit Memory Exceeding One Second
P. C. Maurer et al.
Defects in diamond can be operated as quantum memories at room temperature.
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- 1287** Bright Coherent Ultrahigh Harmonics in the keV X-ray Regime from Mid-Infrared Femtosecond Lasers
T. Popmintchev et al.
An electron excitation process in a high-pressure gas converts infrared light into a well-confined beam of x-rays.
- 1291** The Heliosphere's Interstellar Interaction: No Bow Shock
D. J. McComas et al.
Observations from the Interstellar Boundary Explorer are not consistent with a bow shock ahead of the heliosphere.
>> *Perspective p. 1243*
- 1294** Templating Three-Dimensional Self-Assembled Structures in Bilayer Block Copolymer Films
A. Tavakkoli K. G. et al.
An array of posts guides the bilayer assembly of block copolymers with independent control of morphology and orientation.
- 1298** Titanium and Zinc Oxide Nanoparticles Are Proton-Coupled Electron Transfer Agents
J. N. Schrauben et al.
Protons can play more of a role than previously appreciated in charge-transfer events at nanoparticle interfaces.

- 1301** Interglacial Hydroclimate in the Tropical West Pacific Through the Late Pleistocene
A. N. Meckler et al.
Precipitation in Borneo, largely invariant during the last four interglacial periods, decreased during glacial terminations.
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- 1304** Global Honey Bee Viral Landscape Altered by a Parasitic Mite
S. J. Martin et al.
The arrival on Hawaii of the mite *Varroa* has decreased diversity and increased prevalence of deformed wing virus.

- 1306** Vitamin K₂ Is a Mitochondrial Electron Carrier That Rescues Pink1 Deficiency
M. Vos et al.
Adding vitamin K rescues fruit flies bearing a mutation in a Parkinson's disease gene homolog.
>> *Perspective p. 1241*

- 1310** Actin Network Architecture Can Determine Myosin Motor Activity
A.-C. Reymann et al.
Myosin crumples up antiparallel actin fibers and leaves parallel bundles intact.

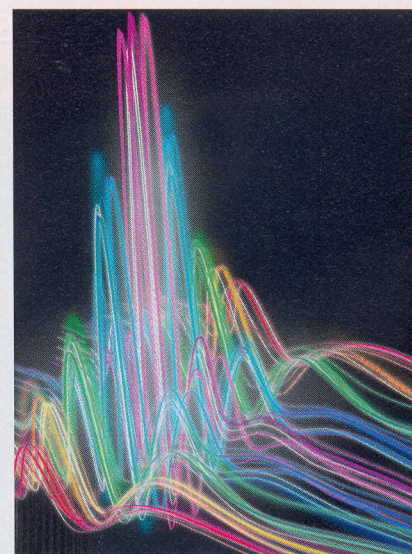
- 1314** Interactions Between Commensal Fungi and the C-Type Lectin Receptor Dectin-1 Influence Colitis
I. D. Iliev et al.
Mammals contain resident fungal intestinal populations that influence disease susceptibility.
>> *The Gut Microbiota section p. 1245*

- 1317** Chemokine Gene Silencing in Decidual Stromal Cells Limits T Cell Access to the Maternal-Fetal Interface
P. Nancy et al.
Turning off the expression in the placenta of T cell attractants allows the mother to tolerate the fetus.

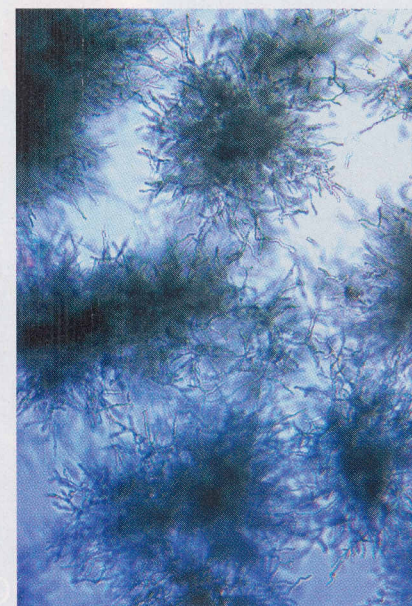
- 1321** Innate Lymphoid Cells Promote Anatomical Containment of Lymphoid-Resident Commensal Bacteria
G. F. Sonnenberg et al.
Lymphocytes prevent bacteria from spreading beyond gut-associated lymphoid tissues and causing systemic inflammation.
>> *News story p. 1228; The Gut Microbiota section p. 1245*

- 1325** Regulated Virulence Controls the Ability of a Pathogen to Compete with the Gut Microbiota
N. Kamada et al.
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>> *Perspective p. 1238; The Gut Microbiota section p. 1245*

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