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COVER

Artist's rendering of the airway epithelial cell surface in human lungs. The airway surface is lined by arrays of cylindrical cilia (shown as yellow projections) that are 7 micrometers long and 200 nanometers in diameter. The cilia and airway surface are covered by tethered biomacromolecules (shown as green hairs) that form dense, brushlike structures. These epithelial brushes protect the airways from infectious agents and ensure efficient flow of mucus from healthy lungs. See page 937. For the story behind the cover, go to <http://scim.ag/cov6097>.

Image: Yan Liang (www.l2xy2.com), Li-Heng Cai, Michael Rubinstein

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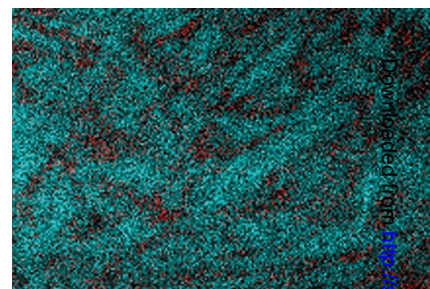
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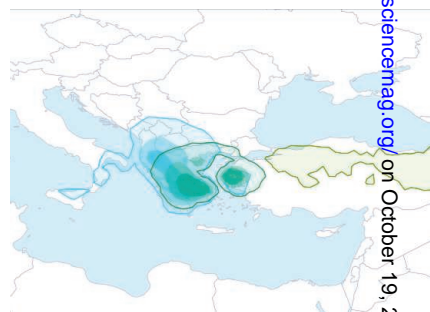
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Genome Sequencing Identifies a Basis for Everolimus Sensitivity

G. Iyer et al.

Tumor genome sequencing reveals the molecular basis of a patient's unexpected and dramatic response to a cancer drug.

10.1126/science.1226344

Acute Gastrointestinal Infection Induces Long-Lived Microbiota-Specific T Cell Responses

T. W. Hand et al.

Enteric infections induce lasting adaptive immunity against commensal bacteria that may play a role in intestinal problems.

10.1126/science.1220961

Cold-Inducible RNA-Binding Protein Modulates Circadian Gene Expression Posttranscriptionally

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An RNA-binding protein whose cyclic accumulation is regulated by body temperature confers robustness to circadian oscillators.

10.1126/science.1217726

Adhesion Functions in Cell Sorting by Mechanically Coupling the Cortices of Adhering Cells

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10.1126/science.1225399

Molecular Mechanics of Cardiac Myosin-Binding Protein C in Native Thick Filaments

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A myosin thick filament-associated sarcomeric protein modulates cardiac contractility in a phosphorylation-dependent manner.

10.1126/science.1223602

Synthesis and Characterization of a Rhodium(I) σ -Alkane Complex in the Solid State

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Hydrogenation of a crystalline precursor enables structural characterization of a commonly evoked reaction intermediate.

10.1126/science.1225028

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New research identifies a molecule in semen that promotes female fertility.

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The Signal Transduction Knowledge Environment

21 August issue: <http://scim.ag/ss082112>

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PERSPECTIVE: The Path to Chemotaxis and Transcription Is Smoothed

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Distinct outputs of Hedgehog signaling arise from different subcellular localization of the signal transducer Smoothed.

RESEARCH ARTICLE: The Protease Omi Cleaves the Mitogen-Activated Protein Kinase Kinase MEK1 to Inhibit Microglial Activation

Q. Hu et al.

Loss of a protease in microglia results in neuroinflammation that contributes to neurodegeneration and Parkinson's disease.

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22 August issue: <http://scim.ag/stm082212>

RESEARCH ARTICLE: Niacin Lipid Efficacy Is Independent of Both the Niacin Receptor GPR109A and Free Fatty Acid Suppression

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FOCUS: It Ain't Over 'Til the Fat Lady Sings

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RESEARCH ARTICLE: Tracking a Hospital Outbreak of Carbapenem-Resistant *Klebsiella pneumoniae* with Whole-Genome Sequencing

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Tracking a hospital outbreak of carbapenem-resistant *Klebsiella pneumoniae* with whole-genome sequencing revealed its origin and probable modes of transmission.

REVIEW: Engineering Approaches to Immunotherapy

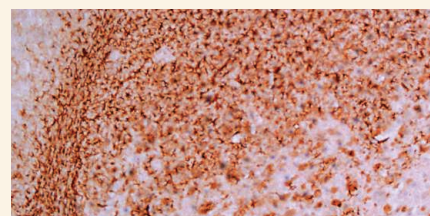
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The rapidly evolving field of immunoengineering will bring new design strategies to clinical immunology.

RESEARCH ARTICLE: Targeted Disruption of the BCL9/ β -Catenin Complex Inhibits Oncogenic Wnt Signaling

K. Takada et al.

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Inflammation in neurodegeneration.

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A. Ruben

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J. Austin

The best way to motivate scientists is to engage them, encourage them, and stay out of their way.

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