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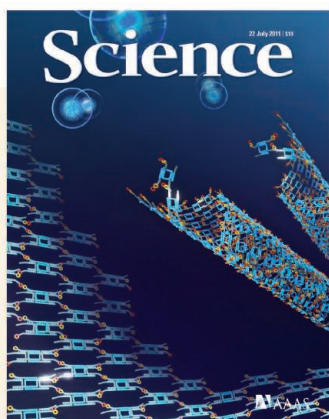
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COVER

Schematic representation of one- and two-dimensional RNA nanostructures, 100 to 200 nanometers in length, built from single-stranded RNA building blocks programmed to self-assemble within bacterial cells. On page 470, Delebecque *et al.* describe the design and use of these assemblies as scaffolds to spatially organize a hydrogen-producing biosynthetic pathway.

Image: Krista Shapton (Blot Media) and Faisal Aldaye (Harvard Medical School)

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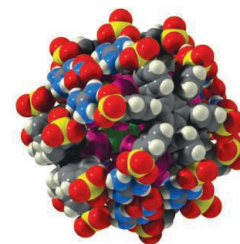
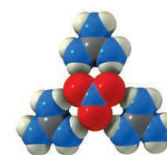
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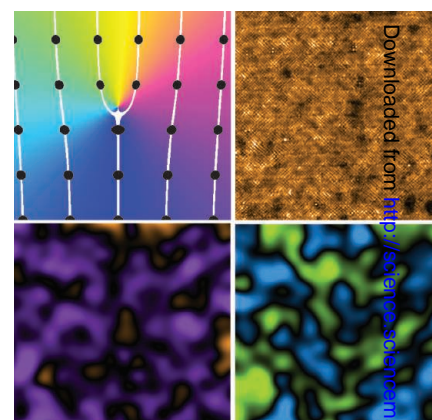
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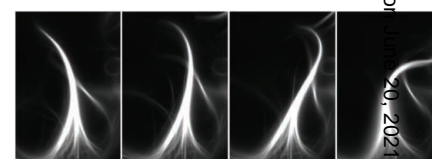
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www.scienceexpress.org

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Synaptic Pruning by Microglia Is Necessary for Normal Brain Development

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A good brain needs a good vacuum cleaner.
10.1126/science.1202529

Optix Drives the Repeated Convergent Evolution of Butterfly Wing Pattern Mimicry

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Heliconius butterfly wing pattern mimicry is driven by cis-regulatory variation of the *optix* gene.
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High harvest levels of low-trophic level fishes may have cascading marine ecosystem effects.
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Comment on “Activation of β -Catenin in Dendritic Cells Regulates Immunity Versus Tolerance in the Intestine”

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Full text at www.sciencemag.org/cgi/content/full/333/6041/405-a

Response to Comment on “Activation of β -Catenin in Dendritic Cells Regulates Immunity Versus Tolerance in the Intestine”

S. Manicassamy and B. Pulendran

Full text at www.sciencemag.org/cgi/content/full/333/6041/405-b

SCIENCE NOW

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Highlights From Our Daily News Coverage

Punching a Hole in Time

New ‘time cloak’ hides events that occur at a specific moment.

<http://scim.ag/timecloak>

‘Asexual’ Ants May Be Having Sex After All
Researchers turn up evidence of sperm in colonies full of female clones.

<http://scim.ag/asex-ants>

Cheating on the Beachmaster

Female elephant seals often avoid the harem and mate on the sly.

<http://scim.ag/beachmaster>

SCIENCE SIGNALING

www.sciencesignaling.org

The Signal Transduction Knowledge Environment
19 July issue: <http://scim.ag/ss071911>

RESEARCH ARTICLE: The Deacetylase SIRT1 Promotes Membrane Localization and Activation of Akt and PDK1 During Tumorigenesis and Cardiac Hypertrophy

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Deacetylation of Akt and its activating kinase PDK1 promotes cell growth in physiological and pathological settings.

RESEARCH ARTICLE: PreTCR and TCR $\gamma\delta$ Signal Initiation in Thymocyte Progenitors Does Not Require Domains Implicated in Receptor Oligomerization

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T cell receptor chains lacking oligomerization domains can drive the development of early thymocyte progenitors.

EDITORIAL GUIDE: Gatekeepers of Science and Society

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Cells and society rely on information gatekeepers to identify problems and direct an appropriate response.

MEETING REPORT: Sequence, Structure, and Network Evolution of Protein Phosphorylation

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Analysis of phosphorylation-based signaling systems provides insight into the evolution of these regulatory molecules.

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Integrating Medicine and Science

20 July issue: <http://scim.ag/stm072011>

COMMENTARY: Teaching Biomedical Technology Innovation as a Discipline

P. G. Yock et al.

Universities are experimenting with initiatives that define an emerging academic discipline: biomedical technology innovation.

RESEARCH ARTICLE: Cardiac AAV9-S100A1 Gene Therapy Rescues Post-Ischemic Heart Failure in a Preclinical Large Animal Model

S. T. Pleger et al.

A protein that regulates cellular calcium, delivered by gene therapy, improves cardiac function in pigs with heart failure.

RESEARCH ARTICLE: A Common Mutation in the Defensin *DEFB126* Causes Impaired Sperm Function and Subfertility

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PERSPECTIVE: Defending Male Fertility

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Evidence from functional studies and human genetics shows that a common variant in the *DEFB126* gene leads to reduced male fertility.

RESEARCH ARTICLE: Recurrent *GNAS* Mutations Define an Unexpected Pathway for Pancreatic Cyst Development

J. Wu et al.

A mutation in the gene *GNAS* serves as a marker for pancreatic cysts that can progress to become invasive adenocarcinomas, guiding therapy.

SCIENCE CAREERS

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Free Career Resources for Scientists

Space Cadet

V. Venkatraman

As the shuttle makes its final orbits, scientist-astronaut Kathleen Rubins focuses on the future.

http://scim.ag/space_cadet

A Solo Career in Patent Law

S. Reed et al.

Engineer-turned-patent attorney Kate Hillis talks about starting over with a start-up of her own.

http://scim.ag/patent_law

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