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Artificial Blood Vessels Prove Effective in a Split Second.

A lightning-fast chemical provides glare protection, study finds.

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Dispersion of the Excitations of Fractional Quantum Hall States

Superconductivity at the Two-Dimensional Limit

Superconductivity persists in lead films down to just two monolayers thick.

The dispersion of excitations in a buried two-dimensional electron system can now be probed.

Superconductivity at the Two-Dimensional Limit

Superconductivity persists in lead films down to just two monolayers thick.

Dispersion of the Excitations of Fractional Quantum Hall States

I. V. Kukashkin et al.

The dispersion of excitations in a buried two-dimensional electron system can now be probed.

10.1126/science.1170775

Superconductivity at the Two-Dimensional Limit

S. Qin et al.

Superconductivity persists in lead films down to just two monolayers thick.

10.1126/science.1172408

Research Article: Gα13 and Gα16 Are Required for Epidermal Growth Factor–Mediated Activation of the Akt-mTORC1 Pathway

C. Cao et al.

Two members of the Gαi family of G proteins form complexes with EGFR and the adaptor protein Gab1 to mediate activation of Akt.

Research Article: Ligand Binding to LRP1 Transactivates Trk Receptors by a Src Family Kinase–Dependent Pathway

Y. Shi et al.

Trk receptor–mediated neurite outgrowth is triggered by distinct ligands that activate LRP1.

Research Article: Neurotransmitters Drive Combinatorial Multistate Postsynaptic Density Networks

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Analysis of protein phosphorylation patterns provides insight into the organization of molecular networks at the postsynaptic density.

Perspective: Nontraditional Signaling Mechanisms of Lipoprotein Receptors

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Lipoprotein receptors can trigger calcium-dependent kinase activation, gene transcription, or TrkA receptor–dependent signaling.

Review: Signaling by Gasotransmitters

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Presentation: Mechatanobiology of the Skeleton

C. H. Turner et al.

Mechanical force induces osteogenesis by repressing the production of sclerostin, an inhibitor of Wnt signaling.

The Genetic Structure and History of Africans and African Americans

S. A. Tishkoff et al.

It's a story about the evolutionary history of Africans and African Americans, the origins of the immune system, and more.

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Two members of the Gαi family of G proteins form complexes with EGFR and the adaptor protein Gab1 to mediate activation of Akt.

To be published in next week’s issue.

SIGNALING

Gasotransmitters elicit vasorelaxation.

Gasotransmitters elicit vasorelaxation.
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