

SPECIAL SECTION

Stem Cells

INTRODUCTION

1661 Steps to the Clinic

PERSPECTIVES

1662 FDA Regulation of Stem Cell–Based Products

D. W. Fink Jr.

1664 Medical Innovation Versus Stem Cell Tourism

O. Lindvall and I. Hyun

REVIEWS

1666 The Role of Stromal Stem Cells in Tissue Regeneration and Wound Repair

T. S. Stappenbeck and H. Miyoshi

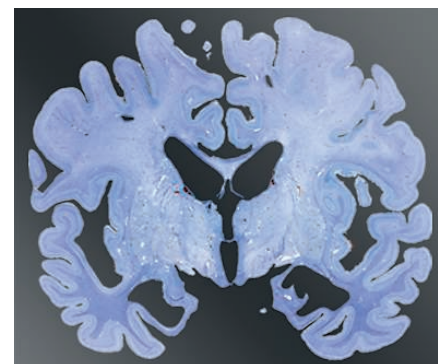
1670 The Increasing Complexity of the Cancer Stem Cell Paradigm

J. M. Rosen and C. T. Jordan

1673 Growth Factors, Matrices, and Forces Combine and Control Stem Cells

D. E. Discher et al.

>> See also related Editorial on p. 1617, Policy Forum on p. 1648, Review on p. 1679, and Report on p. 1707; Science Podcast



page 1634

EDITORIAL

1617 Out With the Old, In With the New?

Roger Pedersen

>> *Stem Cells* section p. 1661

NEWS OF THE WEEK

1626 Discovery of Untracked Pathogen Vials at Army Lab Sparks Concerns

1627 ITER Gets the Nod for Slower, Step-by-Step Approach

1628 Back to the Drawing Board for Psychiatric Genetics

1629 Bioscientists Slowly Bridge the Taiwan Strait

1630 China Reins in Wilder Impulses in Treatment of ‘Internet Addiction’

1631 From *Science’s* Online Daily News Site

1632 Biodiversity Databases Spread, Prompting Unification Call

1633 From the *Science* Policy Blog

NEWS FOCUS

1634 The Brain Collector

>> *Science Podcast*

1637 Antibiotics in Nature: Beyond Biological Warfare

1640 Are We Ready for the Next Solar Maximum? No Way, Say Scientists

LETTERS

1642 The Global Alliance for Chronic Diseases

A. S. Daar et al.

Current Brazilian Law on Animal Experimentation

C. J. S. Machado et al.

Creationist Beliefs in Europe

P. Clément and M.-P. Quessada

Sex in *Leishmania*

P. Volf and J. Sadlova

BOOKS ET AL.

1646 Mothers and Others

S. B. Hrdy, reviewed by G. R. Brown

1647 Longing and Belonging

A. J. Pugh, reviewed by S. L. Hofferth

POLICY FORUM

1648 The NIH Draft Guidelines on Human Stem Cell Research

M. A. Majumder and C. B. Cohen

>> *Stem Cells* section p. 1661; *Science Podcast*

EDUCATION FORUM

1650 Innovating Education in Croatia

D. Primorac

PERSPECTIVES

1651 Seeing Green and Red in Diatom Genomes

T. Dagan and W. Martin

>> *Report* p. 1724

1652 Auxin at the Evo-Devo Intersection

W. E. Friedman

>> *Research Article* p. 1684

1654 Phase Transition in a Cell

L. Le Goff and T. Lecuit

>> *Report* p. 1729

1655 Rate Control and Reaction Engineering

J. K. Nørskov et al.

1656 Building an Open Cloud

M. R. Nelson

CONTENTS continued >>



COVER

Colonies of human embryonic stem cells with differentiating cells at their edges, growing on mouse feeder cells. Cell nuclei are stained in blue, nuclear lamina in red, and cytoplasm in green (overlapping blue and red areas appear purple). The self-renewal capacity and pluripotency of human stem cells make them valuable for modeling human disease. These cells also display potential for transplantation medicine. See the special section beginning on page 1661.

Image: Oded Kopper and Nissim Benvenisty, The Hebrew University of Jerusalem

DEPARTMENTS

- 1613 This Week in *Science*
- 1619 Editors’ Choice
- 1622 *Science* Staff
- 1625 Random Samples
- 1658 AAAS News & Notes
- 1735 New Products
- 1736 *Science* Careers

REVIEW

- 1679 **Competitive Interactions Between Cells: Death, Growth, and Geography**
L. A. Johnston
>> *Stem Cells* section p. 1661

BREVIA

- 1683 **Elevated CO₂ Enhances Otolith Growth in Young Fish**
D. M. Checkley Jr. et al.
Acidification of the oceans may have unexpected effects on the development of bony structures in fish larvae.

RESEARCH ARTICLE

- 1684 **Auxin-Dependent Patterning and Gamete Specification in the *Arabidopsis* Female Gametophyte**
G. C. Pagnussat et al.
An auxin gradient is involved in cell fate specification of the female sex cells in flowering plants.
>> *Perspective* p. 1652

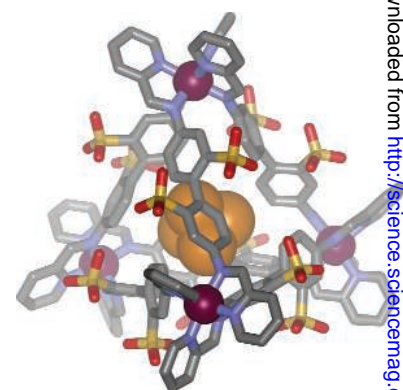
REPORTS

- 1689 **Extending Universal Nodal Excitations Optimizes Superconductivity in Bi₂Sr₂CaCu₂O_{8+δ}**
A. Pushp et al.
Scanning tunneling spectroscopy reveals strong electronic correlations in the insulating state of a cuprate superconductor.
- 1693 **High-Resolution NMR in Magnetic Fields with Unknown Spatiotemporal Variations**
P. Pelupessy et al.
A coherence transfer method overcomes disruptions to nuclear magnetic resonance spectra by magnetic field fluctuations.
- 1697 **White Phosphorus Is Air-Stable Within a Self-Assembled Tetrahedral Capsule**
P. Mal et al.
A molecular cage keeps phosphorus from igniting in air, yet releases it easily for reactions when benzene is added.
- 1699 **Trapping Molecules on a Chip**
S. A. Meek et al.
Trapping a beam of carbon monoxide molecules onto a chip should enable fundamental studies of chemical dynamics.
- 1702 **Amplified Trace Gas Removal in the Troposphere**
A. Hofzumahaus et al.
A yet undescribed pathway for hydroxyl radical production is needed to account for reaction rates of highly polluted air.

- 1705 **Postmating Sexual Selection Favors Males That Sire Offspring with Low Fitness**
T. Bilde et al.
Multiple mating in beetles may not benefit females, as sexually antagonistic evolution may be at work.
- 1707 **Dynamic Signaling Network for the Specification of Embryonic Pancreas and Liver Progenitors**
E. Wandzioch and K. S. Zaret
During mammalian development, networks of signals coordinate cell-type programming into specific organs.
>> *Stem Cells* section p. 1661
- 1710 **MicroRNA-92a Controls Angiogenesis and Functional Recovery of Ischemic Tissues in Mice**
A. Bonauer et al.
Inhibition of a microRNA that represses blood vessel growth enhances the recovery of tissue damaged by an inadequate blood supply.
- 1713 **Mitochondrial STAT3 Supports Ras-Dependent Oncogenic Transformation**
D. J. Gough et al.
A transcription factor promotes the transformation of cells by the Ras oncogene only when present in the mitochondrion.
- 1716 **Synthetic Heterochromatin Bypasses RNAi and Centromeric Repeats to Establish Functional Centromeres**
A. Kagansky et al.
A tethered methyltransferase induces the tight-packing of DNA, the formation of a kinetochore, and chromosome segregation.
- 1720 **Diversity and Complexity in DNA Recognition by Transcription Factors**
G. Badis et al.
A broad survey of transcription factors reveals that related proteins can have multiple and differing DNA binding specificities.
- 1724 **Genomic Footprints of a Cryptic Plastid Endosymbiosis in Diatoms**
A. Moustafa et al.
The genomes of early plant representatives are composites, with a substantial number of foreign genes from red and green algae.
>> *Perspective* p. 1651
- 1726 **Solution Nuclear Magnetic Resonance Structure of Membrane-Integral Diacylglycerol Kinase**
W. D. Van Horn et al.
Mutations reveal the distribution of sequence changes that alter folding and affect function in a membrane-bound enzyme.



pages 1651 & 1724



page 1697

- 1729 **Germline P Granules Are Liquid Droplets That Localize by Controlled Dissolution/Condensation**
C. P. Brangwynne et al.
Localization of RNA and protein-rich germ-cell granules occurs by controlled dissolution and condensation.
>> *Perspective* p. 1654
- 1732 **Ventral Tegmental Area BDNF Induces an Opiate-Dependent-Like Reward State in Naïve Rats**
H. Vargas-Perez et al.
A growth factor involved in neuronal plasticity alters neurons in a specific area of the brain after chronic exposure to opioid drugs.

CONTENTS continued >>

SCIENCEONLINE

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String Theory, Quantum Phase Transitions, and the Emergent Fermi Liquid

M. Čubrović et al.

Mathematical methods developed in string theory to describe gravity are applied to complex condensed matter systems.

10.1126/science.1174962

Measuring the Cosmic Ray Acceleration Efficiency of a Supernova Remnant

E. A. Helder et al.

The pressure induced by cosmic rays produced by the explosion of a star exceeds the thermal pressure behind the shock wave.

10.1126/science.1173383

A Gene Network Regulating Lysosomal Biogenesis and Function

M. Sardiello et al.

Coordination of the genes that regulate lysosomal biogenesis occurs via a shared sequence motif and one transcription factor.

10.1126/science.1174447

An ER-Mitochondria Tethering Complex Revealed by a Synthetic Biology Screen

B. Kornmann et al.

A protein complex zippers mitochondria to endoplasmic reticulum for phospholipid transfer.

10.1126/science.1175088

DICER1 Mutations in Familial Pleuropulmonary Blastoma

D. A. Hill et al.

A rare form of lung cancer in children is associated with mutational disruption of an enzyme that generates small noncoding RNAs.

10.1126/science.1174334

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Lamprey sheds one-fifth of its genome, but no one's sure why.

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RESEARCH ARTICLE: The Kinesin Protein Kif7 Is a Critical Regulator of Gli Transcription Factors in Mammalian Hedgehog Signaling

H. O.-L. Cheung et al.

Kif7 may be the functional equivalent of the *Drosophila* kinesin-like protein Costal2.

RESEARCH ARTICLE: PKC- θ Modulates the Strength of T Cell Responses by Targeting Cbl-b for Ubiquitination and Degradation

T. Gruber et al.

PERSPECTIVE: Activation of T Cells: Releasing the Brakes by Proteolytic Elimination of Cbl-b

M. L. Schmitz

Degradation of the ubiquitin E3 ligase Cbl-b in response to T cell costimulation depends on PKC- θ .

PODCAST

A. Levchenko and A. M. VanHook

A microfluidic device enables high-throughput analysis of signaling in individual cells.

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