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Cover legend: Confocal image showing brain-derived adult neural precursor cells (NPCs, turquoise) that express nestin (red). Transplantation of adult NPCs into the chronically injured spinal cord in combination with strategies that optimize the microenvironment of the spinal cord allows functional repair and plasticity after chronic spinal cord injury. For more information, see the article by Karimi-Abdolrezaee et al. in this issue (pages 1657–1676).

i This Week in The Journal

Journal Club

- 1577 **Unraveling LRRK2 Pathogenesis: Common Pathways for Complex Genes?**
Emma Deas and Laura Dunn
- 1580 **New Clues Suggest Distinct Functional Roles for M1 and M2 Intrinsically Photosensitive Retinal Ganglion Cells**
Xudong Qiu and Didem Goz

Brief Communications

- 1631 **Cognitive Loss in Zinc Transporter-3 Knock-Out Mice: A Phenocopy for the Synaptic and Memory Deficits of Alzheimer's Disease?**
Paul A. Adlard, Jacqui M. Parncutt, David I. Finkelstein, and Ashley I. Bush
- 1721 **Contextual Novelty Changes Reward Representations in the Striatum**
Marc Guitart-Masip, Nico Bunzeck, Klaas E. Stephan, Raymond J. Dolan, and Emrah Düzel
- 1760 **Single-Unit Activity in Piriform Cortex during Slow-Wave State Is Shaped by Recent Odor Experience**
Donald A. Wilson
- 1856 **The "Cutaneous Rabbit" Hopping out of the Body**
Makoto Miyazaki, Masaya Hirashima, and Daichi Nozaki

Articles

CELLULAR/MOLECULAR

- 1595 **Expression of COUP-TFII Nuclear Receptor in Restricted GABAergic Neuronal Populations in the Adult Rat Hippocampus**
Pablo Fuentealba, Thomas Klausberger, Theofanis Karayannis, Wai Yee Suen, Jojanneke Huck, Ryohei Tomioka, Kathleen Rockland, Marco Capogna, Michèle Studer, Marisela Morales, and Peter Somogyi
- 1637 **ERK1/2 Mitogen-Activated Protein Kinase Phosphorylates Sodium Channel Na_v1.7 and Alters Its Gating Properties**
Severine Stamboulian, Jin-Sung Choi, Hye-Sook Ahn, Yu-Wen Chang, Lynda Tyrrell, Joel A. Black, Stephen G. Waxman, and Sulayman D. Dib-Hajj
- 1699 **Nitric Oxide Acts as a Volume Transmitter to Modulate Electrical Properties of Spontaneously Firing Neurons via Apamin-Sensitive Potassium Channels**
Liana Artinian, Karine Tornieri, Lei Zhong, Deborah Baro, and Vincent Rehder

- 1798 **A Role for the Ubiquitin-Proteasome System in Activity-Dependent Presynaptic Silencing**
Xiaoping Jiang, Patricia E. Litkowski, Amanda A. Taylor, Ying Lin, B. Joy Snider, and Krista L. Moulder
- 1869 **Presynaptic Mitochondria in Functionally Different Motor Neurons Exhibit Similar Affinities for Ca²⁺ But Exert Little Influence as Ca²⁺ Buffers at Nerve Firing Rates *In Situ***
Amit K. Chouhan, Jinhui Zhang, Konrad E. Zinsmaier, and Gregory T. Macleod
- 1882 **Ca²⁺ Influx through NMDA-Gated Channels Activates ATP-Sensitive K⁺ Currents through a Nitric Oxide-cGMP Pathway in Subthalamic Neurons**
Ke-Zhong Shen and Steven W. Johnson
- 1925 **The Effect of Spatially Inhomogeneous Extracellular Electric Fields on Neurons**
Costas A. Anastassiou, Sean M. Montgomery, Mauricio Barahona, György Buzsáki, and Christof Koch

DEVELOPMENT/PLASTICITY/REPAIR

- 1582 **Genetic Fate Mapping Reveals That the Caudal Ganglionic Eminence Produces a Large and Diverse Population of Superficial Cortical Interneurons**
Goichi Miyoshi, Jens Hjerling-Leffler, Theofanis Karayannis, Vitor H. Sousa, Simon J. B. Butt, James Battiste, Jane E. Johnson, Robert P. Machold, and Gord Fishell
- 1657 **Synergistic Effects of Transplanted Adult Neural Stem/Progenitor Cells, Chondroitinase, and Growth Factors Promote Functional Repair and Plasticity of the Chronically Injured Spinal Cord**
Soheila Karimi-Abdolrezaee, Eftekhari Eftekharpour, Jian Wang, Desiree Schut, and Michael G. Fehlings
- 1686 **Model Calcium Sensors for Network Homeostasis: Sensor and Readout Parameter Analysis from a Database of Model Neuronal Networks**
Cengiz Günay and Astrid A. Prinz
- 1739 **Global Deprivation of Brain-Derived Neurotrophic Factor in the CNS Reveals an Area-Specific Requirement for Dendritic Growth**
Stefanie Rauskolb, Marta Zagrebelsky, Anita Dreznjak, Rubén Deogracias, Tomoya Matsumoto, Stefan Wiese, Beat Erne, Michael Sendtner, Nicole Schaeren-Wiemers, Martin Korte, and Yves-Alain Barde
- 1750 **In the Developing Rat Hippocampus, Endogenous Activation of Presynaptic Kainate Receptors Reduces GABA Release from Mossy Fiber Terminals**
Maddalena D. Caiati, Sudhir Sivakumaran, and Enrico Cherubini
- 1766 **The N-Glycanase *png-1* Acts to Limit Axon Branching during Organ Formation in *Caenorhabditis elegans***
Nasrin Habibi-Babadi, Anna Su, Carlos E. de Carvalho, and Antonio Colavita
- 1822 **12-Lipoxygenase Regulates Hippocampal Long-Term Potentiation by Modulating L-Type Ca²⁺ Channels**
Anthony J. DeCostanzo, Iryna Voloshyna, Zev B. Rosen, Steven J. Feinmark, and Steven A. Siegelbaum
- 1839 **BMPR1a and BMPR1b Signaling Exert Opposing Effects on Gliosis after Spinal Cord Injury**
Vibhu Sahni, Abhishek Mukhopadhyay, Vicki Tysseling, Amy Hebert, Derin Birch, Tammy L. Mcguire, Samuel I. Stupp, and John A. Kessler
- 1914 **Intracellular Redox State Alters NMDA Receptor Response during Aging through Ca²⁺/Calmodulin-Dependent Protein Kinase II**
Karthik Bodhinathan, Ashok Kumar, and Thomas C. Foster

BEHAVIORAL/SYSTEMS/COGNITIVE

- 1610 **Dopamine and Memory: Modulation of the Persistence of Memory for Novel Hippocampal NMDA Receptor-Dependent Paired Associates**
Ingrid Bethus, Dorothy Tse, and Richard G. M. Morris
- 1677 **Role of Afferents in the Differentiation of Bipolar Cells in the Mouse Retina**
Patrick W. Keeley and Benjamin E. Reese
- 1712 **Anti-Glucocorticoid Gene Therapy Reverses the Impairing Effects of Elevated Corticosterone on Spatial Memory, Hippocampal Neuronal Excitability, and Synaptic Plasticity**
Theodore C. Dumas, Todd Gillette, Deveroux Ferguson, Kelly Hamilton, and Robert M. Sapolsky
- 1727 **Global Inhibition and Stimulus Competition in the Owl Optic Tectum**
Shreesh P. Mysore, Ali Asadollahi, and Eric I. Knudsen
- 1777 **Distinct Representations and Theta Dynamics in Dorsal and Ventral Hippocampus**
Sébastien Royer, Anton Sirota, Jagdish Patel, and György Buzsáki
- 1832 **Corticofugal Control of Vibrissa-Sensitive Neurons in the Interpolaris Nucleus of the Trigeminal Complex**
Takahiro Furuta, Nadia Urbain, Takeshi Kaneko, and Martin Deschênes
- 1861 **Synaptic Mechanisms of Direction Selectivity in Primary Auditory Cortex**
Chang-quan Ye, Mu-ming Poo, Yang Dan, and Xiao-hui Zhang
- 1894 **The Cerebellum Harbors a Circadian Oscillator Involved in Food Anticipation**
Jorge Mendoza, Paul Pévet, Marie-Paule Felder-Schmittbuhl, Yannick Bailly, and Etienne Challet
- 1905 **Neural Time Course of Echo Suppression in Humans**
Kristina C. Backer, Kevin T. Hill, Antoine J. Shahin, and Lee M. Miller
- 1937 **Selective Electrical Stimulation of the Auditory Nerve Activates a Pathway Specialized for High Temporal Acuity**
John C. Middlebrooks and Russell L. Snyder
- 1947 **Vibrissa-Based Object Localization in Head-Fixed Mice**
Daniel H. O'Connor, Nathan G. Clack, Daniel Huber, Takaki Komiyama, Eugene W. Myers, and Karel Svoboda
- 1968 **Medial Frontal Cortex Motivates But Does Not Control Movement Initiation in the Countermanding Task**
Katherine Wilson Scangos and Veit Stuphorn

NEUROBIOLOGY OF DISEASE

- 1619 **Network Dynamics during Development of Pharmacologically Induced Epileptic Seizures in Rats *In Vivo***
Adi Cymerblit-Sabba and Yitzhak Schiller
- 1648 **γ -Secretase Composed of PS1/Pen2/Aph1a Can Cleave Notch and Amyloid Precursor Protein in the Absence of Nicastrin**
Guojun Zhao, Zhenyi Liu, Ma. Xenia G. Ilagan, and Raphael Kopan
- 1788 **Enhanced Striatal Dopamine Transmission and Motor Performance with LRRK2 Overexpression in Mice Is Eliminated by Familial Parkinson's Disease Mutation G2019S**
Xianting Li, Jyoti C. Patel, Jing Wang, Marat V. Avshalumov, Charles Nicholson, Joseph D. Buxbaum, Gregory A. Elder, Margaret E. Rice, and Zhenyu Yue

1810 Upper Airway Dysfunction of Tau-P301L Mice Correlates with Tauopathy in Midbrain and Ponto-Medullary Brainstem Nuclei

Mathias Dutschmann, Clement Menuet, Georg M. Stettner, Christian Gestreau, Peter Borghgraef, Herman Devijver, Lies Gielis, Gerard Hilaire, and Fred Van Leuven

1983 *Erratum:* In the article “Visual Impairment in the Absence of Dystroglycan” by Jakob S. Satz, Alisdair R. Philp, Huy Nguyen, Hajime Kusano, Jane Lee, Rolf Turk, Megan J. Riker, Jasmine Hernández, Robert M. Weiss, Michael G. Anderson, Robert F. Mullins, Steven A. Moore, Edwin M. Stone, and Kevin P. Campbell, which appeared on pages 13136–13146 of the October 21, 2009 issue, there was an error in Figure 7. The corrected figure and legend appear in this issue.

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