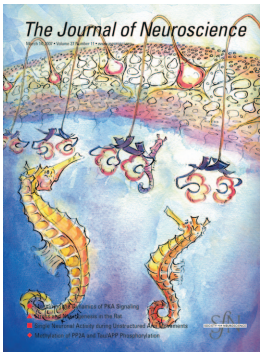
The Journal of Neuroscience

March 14, 2007 • Volume 27 Number 11 www.jneurosci.org



Cover legend: A schematic illustration of Reelin expression in glutamatergic pyramidal neurons in layer II of the entorhinal cortex and their projections to the hippocampus, illustrated here by seahorses (*Hippocampus sp.*). Reelin is a neuromodulator that regulates a number of neuronal functions, including synaptic strength and plasticity, suggesting that Reelin produced in the entorhinal cortex may influence hippocampal plasticity. In humans with Alzheimer's disease as well as in transgenic mouse models of the disease, these neurons are lost and/or decrease expression of Reelin, indicating that decreased Reelin from the entorhinal cortex may contribute to hippocampal dysfunction in Alzheimer's disease. For more information, see the article by Chin et al. in this issue (pages 2727–2733). Artwork by Katherine Nagel.

i **This Week in The Journal**

Brief Communications

2788 **Erythropoietin Enhances Hippocampal Response during Memory Retrieval in Humans**
Kamilla Miskowiak, Ursula O'Sullivan, and Catherine J. Harmer

2943 **The Glutamate-Activated Anion Conductance in Excitatory Amino Acid Transporters Is Gated Independently by the Individual Subunits**
Hans Peter Koch, Ronald Lane Brown, and Hans Peter Larsson

Articles

CELLULAR/MOLECULAR

2744 **Dynamics of Protein Kinase A Signaling at the Membrane, in the Cytosol, and in the Nucleus of Neurons in Mouse Brain Slices**
Nicolas Gervasi, Régine Hepp, Ludovic Tricoire, Jin Zhang, Bertrand Lambolez, Danièle Paupardin-Tritsch, and Pierre Vincent

2793 **Differential Regulation of the Serotonin Transporter Gene by Lithium Is Mediated by Transcription Factors, CCCTC Binding Protein and Y-Box Binding Protein 1, through the Polymorphic Intron 2 Variable Number Tandem Repeat**
Julian Roberts, Alison C. Scott, Mark R. Howard, Gerome Breen, Vivien J. Bubb, Elena Klenova, and John P. Quinn

2802 **HCN Pacemaker Channel Activation Is Controlled by Acidic Lipids Downstream of Diacylglycerol Kinase and Phospholipase A2**
Keri J. Fogle, Alex K. Lyashchenko, Harma K. Turbendian, and Gareth R. Tibbs

2815 **Silencing of Neuroligin Function by Postsynaptic Neurexins**
Hiroki Taniguchi, Leora Gollan, Francisco G. Scholl, Veeravan Mahadomrongkul, Elizabeth Dobler, Nicolas Limthong, Morgen Peck, Chiye Aoki, and Peter Scheiffele

2876 **Cocaine- and Amphetamine-Regulated Transcript: Stimulation of Expression in Rat Vagal Afferent Neurons by Cholecystokinin and Suppression by Ghrelin**
Guillaume de Lartigue, Rod Dimaline, Andrea Varro, and Graham J. Dockray

2883 **Identification of a Novel Endocannabinoid-Hydrolyzing Enzyme Expressed by Microglial Cells**
Giulio G. Muccioli, Cong Xu, Emma Odah, Eiron Cudaback, Jose Antonio Cisneros, Didier M. Lambert, María Luz López Rodríguez, Sandra Bajjalieh, and Nephi Stella

2938 **The Glutamate and Chloride Permeation Pathways Are Colocalized in Individual Neuronal Glutamate Transporter Subunits**
Gregory P. Leary, Emily F. Stone, David C. Holley, and Michael P. Kavanaugh

2999 **Status Epilepticus-Induced Somatostatinergic Hilar Interneuron Degeneration Is Regulated by Striatal Enriched Protein Tyrosine Phosphatase**
Yun-Sik Choi, Stanley L. Lin, Boyoung Lee, Pradeep Kurup, Hee-Yeon Cho, Janice R. Naegele, Paul J. Lombroso, and Karl Obrietan

3046 **The Origin of Quantal Size Variation: Vesicular Glutamate Concentration Plays a Significant Role**
Xin-Sheng Wu, Lei Xue, Raja Mohan, Kenneth Paradiso, Kevin D. Gillis, and Ling-Gang Wu

DEVELOPMENT/PLASTICITY/REPAIR

2734 **Acute Psychosocial Stress Reduces Cell Survival in Adult Hippocampal Neurogenesis without Altering Proliferation**
Rosanne M. Thomas, Gregory Hotsenpiller, and Daniel A. Peterson

2918 **Dopamine D_1/D_5 Receptor Activation Reverses NMDA Receptor-Dependent Long-Term Depression in Rat Hippocampus**
Bruce G. Mockett, Diane Guévremont, Joanna M. Williams, and Wickliffe C. Abraham

3037 **Robo1 and Robo2 Control the Development of the Lateral Olfactory Tract**
Coralie Fouquet, Thomas Di Meglio, Le Ma, Takahiko Kawasaki, Hua Long, Tatsumi Hirata, Marc Tessier-Lavigne, Alain Chédotal, and Kim T. Nguyen-Ba-Charvet

BEHAVIORAL/SYSTEMS/COGNITIVE

2760 **Relationship between Unconstrained Arm Movements and Single-Neuron Firing in the Macaque Motor Cortex**
Tyson N. Aflalo and Michael S. A. Graziano

2781 **The Prefrontal Cortex as a Key Target of the Maladaptive Response to Stress**
João J. Cerqueira, François Mailliet, Osborne F. X. Almeida, Thérèse M. Jay, and Nuno Sousa

2825 **Activity of Inferior Temporal Cortical Neurons Predicts Recognition Choice Behavior and Recognition Time during Visual Search**
Ryan E. B. Mruczek and David L. Sheinberg

2837 **A Role for Hypocretin (Orexin) in Male Sexual Behavior**
John W. Muschamp, Juan M. Dominguez, Satoru M. Sato, Roh-Yu Shen, and Elaine M. Hull

2858 **Synchronization of Neural Activity across Cortical Areas Correlates with Conscious Perception**
Lucia Melloni, Carlos Molina, Marcela Pena, David Torres, Wolf Singer, and Eugenio Rodriguez

2890 **Ghrelin Effects on the Circadian System of Mice**
Paola C. Yannielli,† Penny C. Molyneux, Mary E. Harrington, and Diego A. Golombek

2908 **Neural Correlates of Perceptual Choice and Decision Making during Fear–Disgust Discrimination**
Axel Thielscher and Luiz Pessoa

2948 **Recognition Memory for Objects, Place, and Temporal Order: A Disconnection Analysis of the Role of the Medial Prefrontal Cortex and Perirhinal Cortex**
Gareth R. I. Barker, Flora Bird, Victoria Alexander, and E. Clea Warburton

2958 **Repeated Cocaine Administration Impairs Group II Metabotropic Glutamate Receptor-Mediated Long-Term Depression in Rat Medial Prefrontal Cortex**
Chiung-Chun Huang, Ping-Chun Yang, Hsiao-Ju Lin, and Kuei-Sen Hsu

2979 **"Breakthrough" Dopamine Supersensitivity during Ongoing Antipsychotic Treatment Leads to Treatment Failure over Time**
Anne-Noël Samaha, Philip Seeman, Jane Stewart, Heshmat Rajabi, and Shitij Kapur

2987 **Time Course of Precision in Smooth-Pursuit Eye Movements of Monkeys**
Leslie C. Osborne, Sonja S. Hohl, William Bialek, and Stephen G. Lisberger

3010 **Neural Changes in Control Implementation of a Continuous Task**
Ovidiu V. Lungu, Meagan M. Binenstock, Megan A. Pline, Jennifer R. Yeaton, and James R. Carey

3017 **Brain-Derived Neurotrophic Factor Promotes Long-Term Potentiation-Related Cytoskeletal Changes in Adult Hippocampus**
Christopher S. Rex, Ching-Yi Lin, Eniko A. Kramár, Lulu Y. Chen, Christine M. Gall, and Gary Lynch

3030 **Spike Timing Amplifies the Effect of Electric Fields on Neurons: Implications for Endogenous Field Effects**
Thomas Radman, Yuzhuo Su, Je Hi An, Lucas C. Parra, Marom Bikson

NEUROBIOLOGY OF DISEASE

2727 **Reelin Depletion in the Entorhinal Cortex of Human Amyloid Precursor Protein Transgenic Mice and Humans with Alzheimer's Disease**
Jeannie Chin, Catherine M. Massaro, Jorge J. Palop, Myo T. Thwin, Gui-Qiu Yu, Nga Bien-Ly, Aaron Bender, and Lennart Mucke

2751 **Protein Phosphatase 2A Methyltransferase Links Homocysteine Metabolism with Tau and Amyloid Precursor Protein Regulation**
Estelle Sontag, Viyada Nunbhakdi-Craig, Jean-Marie Sontag, Ramon Diaz-Arrastia, Egon Ogris, Sanjana Dayal, Steven R. Lentz, Erland Arning, and Teodoro Bottiglieri

2846 **NMDA Receptor Subunits Have Differential Roles in Mediating Excitotoxic Neuronal Death Both *In Vitro* and *In Vivo***
Yitao Liu, Tak Pan Wong, Michelle Aarts, Amanda Rooyakkers, Lidong Liu, Ted Weita Lai, Dong Chuan Wu, Jie Lu, Michael Tymianski, Ann Marie Craig, and Yu Tian Wang

2866 **Natural Oligomers of the Alzheimer Amyloid-β Protein Induce Reversible Synapse Loss by Modulating an NMDA-Type Glutamate Receptor-Dependent Signaling Pathway**
Ganesh M. Shankar, Brenda L. Bloodgood, Matthew Townsend, Dominic M. Walsh, Dennis J. Selkoe, and Bernardo L. Sabatini

2896 **Missorting of Tau in Neurons Causes Degeneration of Synapses That Can Be Rescued by the Kinase MARK2/Par-1**
Edda Thies and Eva-Maria Mandelkow

2927 **Seizure Suppression by *top1* Mutations in *Drosophila***
Juan Song, Joyce Hu, and Mark Tanouye

2969 **Conditional Neuronal Simian Virus 40 T Antigen Expression Induces Alzheimer-Like Tau and Amyloid Pathology in Mice**
Kevin H. J. Park, Janice L. Hallows, Paramita Chakrabarty, Peter Davies, and Inez Vincent

Correction: In the article "Novel Isoforms of Dlg Are Fundamental for Neuronal Development in *Drosophila*" by Carolina Mendoza, Patricio Olguín, Gabriela Lafferte, Ulrich Thomas, Susanne Ebitsch, Eckart D. Gundelfinger, Manuel Kukuljan, and Jimena Sierralta, which appeared on pages 2093–2101 of the March 15, 2003 issue, the authors described a novel dlg isoform containing an extended N-terminal domain (dlgS97). Although the authors stand by their results on the description of the gene, its localization, and

biochemical analysis, they have now found errors in their RNA interference (RNAi)-based approach to understand *dlgS97* function. It was reported that injection of a double-stranded RNA (dsRNA) directed to the novel isoform dlgS97 correlated with strong defects in the development of the nervous system. However, the recent isolation of a *dlgS97* null mutant that lacks defects in embryonic nervous system development, as well as their developmental expression showing that dlgS97 is not present at early embryonic stages, leads the authors to reexamine the RNAi experiments. They have found that the defects reported were attributed to unintended target effects caused by a low-complexity fragment of $<$50 bp at the end of the 1.2 kb RNAi construct. This conclusion is supported by new injection experiments in which the reported defects are not observed after injection of a dsRNA lacking the 50 bp framgnet. In addition, injection of 21 mers contained within this 50 bp region replicated the nervous system described in the paper. In conclusion, although the authors stand by the experiments describing the gene and its expression pattern, the conclusion from the RNAi studies are incorrect.
Additional data can be found at http://www.ceni.cl/sierralta-RNAi

Persons interested in becoming members of the Society for Neuroscience should contact the Membership Department, Society for Neuroscience, 1121 14th St., NW, Suite 1010, Washington, DC 20005, phone 202-962-4000.

Instructions for Authors are available at http://www.jneurosci.org/misc/itoa.shtml. Authors should refer to these Instructions online for recent changes that are made periodically.

Brief Communications Instructions for Authors are available via Internet (http://www.jneurosci.org/misc/ifa_bc.shtml).

Submissions should be submitted online using the following url: http://sfn.manuscriptcentral.com. Please contact the Central Office, via phone, fax, or e-mail with any questions. Our contact information is as follows: phone, 202-962-4000; fax, 202-962-4945; e-mail, jn@sfn.org.