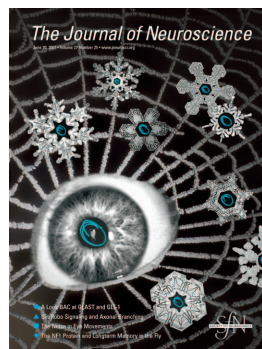


The Journal of Neuroscience

June 20, 2007 • Volume 27 Number 25 www.jneurosci.org



Cover legend: Well practiced movements can be remarkably precise, but as a quick trip to the neighborhood driving range will make abundantly clear, there are limits to this precision. Each cyan squiggle in the cover image indicates the trajectory of the club's head during a particular golf swing. Like snowflakes caught on a frozen spider web, no two swings will ever be exactly alike. Trial-to-trial behavioral variability is a universal, often frustrating, feature of every movement we make. An article in this week's *Journal* examines how the neural processing of signals and noise in the cerebellum of monkeys contributes to behavioral variability during smooth tracking eye movements. For more information, see the article by Medina and Lisberger for details (pages 6832–6842).

i This Week in The Journal

Toolbox

- 6601 **4-Carboxymethoxy-5,7-Dinitroindolyl-Glu: An Improved Caged Glutamate for Expeditious Ultraviolet and Two-Photon Photolysis in Brain Slices**
Graham C. R. Ellis-Davies, Masanori Matsuzaki, Martin Paukert, Haruo Kasai, and Dwight E. Bergles

Journal Club

- 6605 **Adult Neural Precursor Cells and the Dysmyelinated Spinal Cord**
Daniel J. Webber

Brief Communications

- 6723 **Specific *Drosophila* Dscam Juxtamembrane Variants Control Dendritic Elaboration and Axonal Arborization**
Lei Shi, Hung-Hsiang Yu, Jacob S. Yang, and Tzumin Lee
- 6810 **Auditory Feedback and Song Production Do Not Regulate Seasonal Growth of Song Control Circuits in Adult White-Crowned Sparrows**
Eliot A. Brenowitz, Karin Lent, and Edwin W. Rubel

Articles

CELLULAR/MOLECULAR

- 6607 **Variations in Promoter Activity Reveal a Differential Expression and Physiology of Glutamate Transporters by Glia in the Developing and Mature CNS**
Melissa R. Regan, Yanhua H. Huang, Yu Shin Kim, Margaret I. Dykes-Hoberg, Lin Jin, Andrew M. Watkins, Dwight E. Bergles, and Jeffrey D. Rothstein
- 6655 **C-Terminal Modification Is Required for GABARAP-Mediated GABA_A Receptor Trafficking**
Zi-Wei Chen, Chang-Sheng S. Chang, Tarek A. Leil, and Richard W. Olsen
- 6684 **Integration of Asynchronously Released Quanta Prolongs the Postsynaptic Spike Window**
Karl J. Iremonger and Jaideep S. Bains
- 6712 **Schwann Cell-Derived Factors Modulate Synaptic Activities at Developing Neuromuscular Synapses**
Guan Cao and Chien-Ping Ko

- 6729 **A New Binding Motif for the Transcriptional Repressor REST Uncovers Large Gene Networks Devoted to Neuronal Functions**
Stefanie J. Otto, Sean R. McCorkle, John Hover, Cecilia Conaco, Jong-Jin Han, Soren Impey, Gregory S. Yochum, John J. Dunn, Richard H. Goodman, and Gail Mandel
- 6751 **NKCC1 Phosphorylation Stimulates Neurite Growth of Injured Adult Sensory Neurons**
Simon Pieraut, Valérie Laurent-Matha, Chamroeun Sar, Thomas Hubert, Ilana Méchaly, Cécile Hilaire, Marcel Mersel, Eric Delpire, Jean Valmier, and Frédérique Scamps
- 6781 **Combined Activation of L-Type Ca^{2+} Channels and Synaptic Transmission Is Sufficient to Induce Striatal Long-Term Depression**
Louise Adermark and David M. Lovinger
- 6788 **Sustained Structural Change of GABA_A Receptor-Associated Protein Underlies Long-Term Potentiation at Inhibitory Synapses on a Cerebellar Purkinje Neuron**
Shin-ya Kawaguchi and Tomoo Hirano
- 6800 **Na^+/Cl^- Dipole Couples Agonist Binding to Kainate Receptor Activation**
Adrian Y. C. Wong, David M. MacLean, and Derek Bowie

DEVELOPMENT/PLASTICITY/REPAIR

- 6633 **FLIP_L Protects Neurons against *In Vivo* Ischemia and *In Vitro* Glucose Deprivation-Induced Cell Death**
Era Taoufik, Samuel Valable, Georg J. Müller, Michael L. Roberts, Didier Divoux, Antoine Tinel, Anda Voulgari-Kokota, Vivian Tseveleki, Fiorella Altruda, Hans Lassmann, Edwige Petit, and Lesley Probert
- 6675 **Absence of Adenylyl Cyclase 3 Perturbs Peripheral Olfactory Projections in Mice**
Dong-Jing Zou, Alexander T. Chesler, Claire E. Le Pichon, Andriy Kuznetsov, Xin Pei, Eugene L. Hwang, and Stuart Firestein
- 6692 **Persistence of Experience-Induced Homeostatic Synaptic Plasticity through Adulthood in Superficial Layers of Mouse Visual Cortex**
Anubhuthi Goel and Hey-Kyoung Lee
- 6760 **Evidence for Activity-Dependent Cortical Wiring: Formation of Interhemispheric Connections in Neonatal Mouse Visual Cortex Requires Projection Neuron Activity**
Hidenobu Mizuno, Tomoo Hirano, and Yoshiaki Tagawa
- 6843 **Dual Branch-Promoting and Branch-Repelling Actions of Slit/Robo Signaling on Peripheral and Central Branches of Developing Sensory Axons**
Le Ma and Marc Tessier-Lavigne

BEHAVIORAL/SYSTEMS/COGNITIVE

- 6620 **The Cerebellar Interpositus Nucleus and the Dynamic Control of Learned Motor Responses**
Raudel Sánchez-Campusano, Agnès Gruart, and José M. Delgado-García
- 6647 **The Hippocampus and Spatial Memory: Findings with a Novel Modification of the Water Maze**
Robert E. Clark, Nicola J. Broadbent, and Larry R. Squire
- 6664 **Convergent Motor Patterns from Divergent Circuits**
Shari R. Saideman, Dawn M. Blitz, and Michael P. Nusbaum
- 6740 **Sensitivity to Interaural Time Differences in the Inferior Colliculus with Bilateral Cochlear Implants**
Zachary M. Smith and Bertrand Delgutte

6815 **Focal Stimulation of the Posterior Parietal Cortex Increases the Excitability of the Ipsilateral Motor Cortex**
Giacomo Koch, Miguel Fernandez Del Olmo, Binith Cheeran, Diane Ruge, Sven Schippling, Carlo Caltagirone, and John C. Rothwell

6832 **Variation, Signal, and Noise in Cerebellar Sensory–Motor Processing for Smooth-Pursuit Eye Movements**
Javier F. Medina and Stephen G. Lisberger

NEUROBIOLOGY OF DISEASE

6701 **Targeting Group III Metabotropic Glutamate Receptors Produces Complex Behavioral Effects in Rodent Models of Parkinson’s Disease**
Sebastien Lopez, Nathalie Turle-Lorenzo, Francine Acher, Elvira De Leonibus, Andrea Mele, and Marianne Amalric

6771 **Alzheimer’s-Type Amyloidosis in Transgenic Mice Impairs Survival of Newborn Neurons Derived from Adult Hippocampal Neurogenesis**
Laure Verret, Joanna L. Jankowsky, Guilian M. Xu, David R. Borchelt, and Claire Rampon

6823 **Dynamic Changes in Vesicular Glutamate Transporter 1 Function and Expression Related to Methamphetamine-Induced Glutamate Release**
Karla A. Mark, Maria S. Quinton, Shelley J. Russek, and Bryan K. Yamamoto

6852 **Distinct Functional Domains of Neurofibromatosis Type 1 Regulate Immediate versus Long-Term Memory Formation**
Ivan Shun Ho, Frances Hannan, Hui-Fu Guo, Inessa Hakker, and Yi Zhong

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.