

# The Journal of Neuroscience

April 20, 2011 • Volume 31 Number 16 • www.jneurosci.org



**Cover legend:** Illustration of GABAergic terminals (purple) that establish synapses on a pyramidal cell soma (beige) in the mouse hippocampal CA1 region.

Synapses contain pentameric GABA<sub>A</sub> receptor channels (green), but they contain some tetrameric NMDA receptors (yellow) as well. For more information, see the article by Szabadits et al. in this issue (pages 5893–5904).

## i This Week in The Journal

### Journal Club

- 5889 **The Role of the Medial Orbitofrontal Cortex in Intertemporal Choice: Prospection or Valuation?**  
Jan Peters
- 5891 **The Role of the Error Positivity in the Conscious Perception of Errors**  
Joseph M. Orr and Melisa Carrasco

### Brief Communications

- 5905 **Involvement of a Subpopulation of Neuronal M<sub>4</sub> Muscarinic Acetylcholine Receptors in the Antipsychotic-like Effects of the M<sub>1</sub>/M<sub>4</sub> Preferring Muscarinic Receptor Agonist Xanomeline**  
Ditte Dencker, Gitta Wörtwein, Pia Weikop, Jongrye Jeon, Morgane Thomsen, Thomas N. Sager, Arne Mørk, David P. D. Woldbye, Jürgen Wess, and Anders Fink-Jensen
- 5965 **A Proactive Mechanism for Selective Suppression of Response Tendencies**  
Weidong Cai, Caitlin L. Oldenkamp, and Adam R. Aron
- 5970 **Mitochondrial Parkin Recruitment Is Impaired in Neurons Derived from Mutant PINK1 Induced Pluripotent Stem Cells**  
Philip Seibler, John Graziotto, Hyun Jeong, Filip Simunovic, Christine Klein, and Dimitri Krainc

### Articles

#### CELLULAR/MOLECULAR

- 5893 **NMDA Receptors in Hippocampal GABAergic Synapses and Their Role in Nitric Oxide Signaling**  
Eszter Szabadits, Csaba Cserép, András Szőnyi, Yugo Fukazawa, Ryuichi Shigemoto, Masahiko Watanabe, Shigeyoshi Itohara, Tamás F. Freund, and Gábor Nyiri
- 5921 **Differential Binding of Calmodulin to Group I Metabotropic Glutamate Receptors Regulates Receptor Trafficking and Signaling**  
Kyu Yeong Choi, Seungsoo Chung, and Katherine W. Roche
- 6041 **Rapid Active Zone Remodeling during Synaptic Plasticity**  
Annika Weyhermüller, Stefan Hallermann, Nicole Wagner, and Jens Eilers
- 6059 **Acid-Sensing Ion Channels in Postoperative Pain**  
Emmanuel Deval, Jacques Noël, Xavier Gasull, Anne Delaunay, Abdelkrim Alloui, Valérie Friend, Alain Eschalier, Michel Lazdunski, and Eric Lingueglia

- 6121 **Ambient GABA-Activated Tonic Inhibition Sharpens Auditory Coincidence Detection via a Depolarizing Shunting Mechanism**  
Zheng-Quan Tang, Emilie Hoang Dinh, Wei Shi, and Yong Lu
- 6174 **Robo1 Regulates Semaphorin Signaling to Guide the Migration of Cortical Interneurons through the Ventral Forebrain**  
Luis R. Hernández-Miranda, Anna Cariboni, Clare Faux, Christiana Ruhrberg, Jin Hyung Cho, Jean-François Cloutier, Britta J. Eickholt, John G. Parnavelas, and William D. Andrews
- 6221 **Intracellular ATP Influences Synaptic Plasticity in Area CA1 of Rat Hippocampus via Metabolism to Adenosine and Activity-Dependent Activation of Adenosine A<sub>1</sub> Receptors**  
Stephanie zur Nedden, Simon Hawley, Naomi Pentland, D. Grahame Hardie, Alexander S. Doney, and Bruno G. Frenguelli
- 6255 **Opposite Movement of the External Gate of a Glutamate Transporter Homolog upon Binding Cotransported Sodium Compared with Substrate**  
Paul Focke, Pierre Moenne-Loccoz, and H. Peter Larsson

#### DEVELOPMENT/PLASTICITY/REPAIR

- 5909 **Interplay of Chemical Neurotransmitters Regulates Developmental Increase in Electrical Synapses**  
Won-Mee Park, Yongfu Wang, Soodong Park, Janna V. Denisova, Joseph D. Fontes, and Andrei B. Belousov
- 5977 **Inosine Augments the Effects of a Nogo Receptor Blocker and of Environmental Enrichment to Restore Skilled Forelimb Use after Stroke**  
Laila Zai, Christina Ferrari, Carlie Dice, Sathish Subbaiah, Leif A. Havton, Giovanni Coppola, Daniel Geschwind, Nina Irwin, Eric Huebner, Stephen M. Strittmatter, and Larry I. Benowitz
- 6053 **Astrocytes from the Contused Spinal Cord Inhibit Oligodendrocyte Differentiation of Adult Oligodendrocyte Precursor Cells by Increasing the Expression of Bone Morphogenetic Proteins**  
Yaping Wang, Xiaoxin Cheng, Qian He, Yiyan Zheng, Dong H. Kim, Scott R. Whittemore, and Qilin L. Cao
- 6108 **Neuronal Activity Causes Rapid Changes of Lateral Amygdala Neuronal Membrane Properties and Reduction of Synaptic Integration and Synaptic Plasticity *In Vivo***  
J. Amiel Rosenkranz
- 6140 **Genomewide Analysis of Rat Barrel Cortex Reveals Time- and Layer-Specific mRNA Expression Changes Related to Experience-Dependent Plasticity**  
Astrid Vallès, Arjen J. Boender, Steef Gijsbers, Roy A. M. Haast, Gerard J. M. Martens, and Peter de Weerd
- 6208 **CC Chemokine Receptor 2 Deficiency Aggravates Cognitive Impairments and Amyloid Pathology in a Transgenic Mouse Model of Alzheimer's Disease**  
Gaëlle Naert and Serge Rivest
- 6235 **Oligodendrocyte Progenitors Reversibly Exit the Cell Cycle and Give Rise to Astrocytes in Response to Interferon- $\gamma$**   
Daniel C. Tanner, Jonathan D. Cherry, and Margot Mayer-Pröschel
- 6247 **Astrocytic Tissue Inhibitor of Metalloproteinase-1 (TIMP-1) Promotes Oligodendrocyte Differentiation and Enhances CNS Myelination**  
Craig S. Moore, Richard Milner, Akiko Nishiyama, Ricardo F. Frausto, David R. Serwanski, Roberto R. Pagarigan, J. Lindsay Whitton, Robert H. Miller, and Stephen J. Crocker

## BEHAVIORAL/SYSTEMS/COGNITIVE

- 5931 **GABA<sub>A</sub> Inhibition Controls Response Gain in Visual Cortex**  
Steffen Katzner, Laura Busse, and Matteo Carandini
- 5989 **Dynamic Coding of Goal-Directed Paths by Orbital Prefrontal Cortex**  
James J. Young and Matthew L. Shapiro
- 6001 **Opposing Roles of Nucleus Accumbens Core and Shell Dopamine in the Modulation of Limbic Information Processing**  
Rutsuko Ito and Anja Hayen
- 6008 **Serotonin-1A Autoreceptors Are Necessary and Sufficient for the Normal Formation of Circuits Underlying Innate Anxiety**  
Jesse W. Richardson-Jones, Caryne P. Craige, Thanh H. Nguyen, Hank F. Kung, Alain M. Gardier, Alex Dranovsky, Denis J. David, Bruno P. Guiard, Sheryl G. Beck, René Hen, and E. David Leonardo
- 6019 **Nutrient-Sensing Hypothalamic TXNIP Links Nutrient Excess to Energy Imbalance in Mice**  
Clémence Blouet and Gary J. Schwartz
- 6079 **Nociceptive Steady-State Evoked Potentials Elicited by Rapid Periodic Thermal Stimulation of Cutaneous Nociceptors**  
André Mouraux, Gian Domenico Iannetti, Elisabeth Colon, Sylvie Nozaradan, Valery Legrain, and Leon Plaghki
- 6088 **Rules of Competitive Stimulus Selection in a Cholinergic Isthmic Nucleus of the Owl Midbrain**  
Ali Asadollahi, Shreesh P. Mysore, and Eric I. Knudsen
- 6098 **Power Fluctuations in Beta and Gamma Frequencies in Rat Globus Pallidus: Association with Specific Phases of Slow Oscillations and Differential Modulation by Dopamine D<sub>1</sub> and D<sub>2</sub> Receptors**  
Cyril Dejean, Gordon Arbuthnott, Jeffery R. Wickens, Catherine Le Moine, Thomas Boraud, and Brian I. Hyland
- 6159 **Environmental Enrichment Confers Stress Resiliency to Social Defeat through an Infralimbic Cortex-Dependent Neuroanatomical Pathway**  
Michael L. Lehmann and Miles Herkenham
- 6188 **Dopaminergic Genes Predict Individual Differences in Susceptibility to Confirmation Bias**  
Bradley B. Doll, Kent E. Hutchison, and Michael J. Frank
- 6199 **Visual Search Demands Dictate Reliance on Working Memory Storage**  
Roy Luria and Edward K. Vogel

## NEUROBIOLOGY OF DISEASE

- 5942 **Cocaine Hijacks  $\alpha 1$  Receptor to Initiate Induction of Activated Leukocyte Cell Adhesion Molecule: Implication for Increased Monocyte Adhesion and Migration in the CNS**  
Honghong Yao, Keejun Kim, Ming Duan, Teruo Hayashi, Minglei Guo, Susan Morgello, Alexander Prat, John Wang, Tsung-Ping Su, and Shilpa Buch
- 5956 **Different Pain, Different Brain: Thalamic Anatomy in Neuropathic and Non-Neuropathic Chronic Pain Syndromes**  
Sylvia M. Gustin, Chris C. Peck, Sophie L. Wilcox, Paul G. Nash, Greg M. Murray, and Luke A. Henderson
- 6028 **Orexin Gene Transfer into Zona Incerta Neurons Suppresses Muscle Paralysis in Narcoleptic Mice**  
Meng Liu, Carlos Blanco-Centurion, RodaRani Konadhode, Suraiya Begum, Dheeraj Pelluru, Dmitry Gerashchenko, Takeshi Sakurai, Masashi Yanagisawa, Anthony N. van den Pol, and Priyattam J. Shiromani

- 6067 **A Role for Myosin Va in Cerebellar Plasticity and Motor Learning: A Possible Mechanism Underlying Neurological Disorder in Myosin Va Disease**  
Mariko Miyata, Yasushi Kishimoto, Masahiko Tanaka, Kouichi Hashimoto, Naohide Hirashima, Yoshiharu Murata, Masanobu Kano, and Yoshiko Takagishi
- 6132 **Targeting of Locus Ceruleus Noradrenergic Neurons Expressing Human Interleukin-2 Receptor  $\alpha$ -Subunit in Transgenic Mice by a Recombinant Immunotoxin anti-Tac(Fv)-PE38: A Study for Exploring Noradrenergic Influence upon Anxiety-Like and Depression-Like Behaviors**  
Keiichi Itoi, Naoya Sugimoto, Saya Suzuki, Keisuke Sawada, Gopal Das, Katsuya Uchida, Toshimitsu Fuse, Shinji Ohara, and Kazuto Kobayashi

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](http://www.jneurosci.org/misc/ifa_bc.shtml)).

Submissions should be submitted online using the following url: <http://jneurosci.msubmit.net>. 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](mailto:jn@sfn.org).