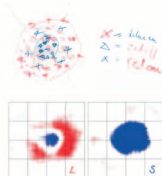


# The Journal of Neuroscience

October 18, 2006 • Volume 26 Number 42 www.jneurosci.org

## The Journal of Neuroscience



● A Non-Golgi-Autonomous Effect of FGF Receptors  
▲ Determining Sites of Synapse Formation  
■ Modulating the Locus  
◆ MacCP2 and Transient BDNF Signaling

*Hubel*

**Cover legend:** The top is an original receptive-field drawing taken from the notebooks of Hubel and Wiesel, December 11, 1962. It is the first documentation of a color-opponent neuron in macaque striate cortex. The neuron was suppressed by red in the receptive-field center, excited by red in the receptive-field surround, and excited by blue throughout. The bottom shows the response maps to cone-isolating stimuli of a similar neuron recorded in alert macaque. In the L map, blue shows regions suppressed by red cones, and red shows regions excited by red cones. In the S map, blue shows regions excited by blue cones. Like most blue-ON cells, spatial opponency was found in only one cone system (L), a feature called  $3/4$  opponency. Spatial and cone opponency is thought to be important for color-contrast calculations. For more information, see the article by Conway and Livingstone in this issue (pages 10826–10846). Drawing reproduced with permission of D. Hubel and T. Wiesel.

## i This Week in The Journal

### Journal Club

- 10621 **Novel Probes for G-Protein-Coupled Receptor Signaling**  
Jill B. Jensen and Jane E. Lauckner

### Mini-Reviews

- 10623 **Neuronal Polarity**  
Mary E. Hatten
- 10624 **mPar6 $\alpha$  Controls Neuronal Migration**  
David J. Solecki, Eve-Ellen Govek, and Mary E. Hatten
- 10626 **Signaling Networks in Neuronal Polarization**  
Takeshi Yoshimura, Nariko Arimura, and Kozo Kaibuchi
- 10631 **The Secretory Pathway and Neuron Polarization**  
Bing Ye, Ye W. Zhang, Lily Yeh Jan, and Yuh Nung Jan
- 10633 **Regulators of Rho GTPases in Neuronal Development**  
Mitsuko Watabe-Uchida, Eve-Ellen Govek, and Linda Van Aelst

### Brief Communications

- 10808 **Blockade of Adenosine A<sub>2A</sub> Receptors Prevents Protein Phosphorylation in the Striatum Induced by Cortical Stimulation**  
César Quiroz, Catarina Gomes, Arlene C. Pak, Joaquim A. Ribeiro, Steven R. Goldberg, Bruce T. Hope, and Sergi Ferré
- 10879 **Pain Processing Is Faster than Tactile Processing in the Human Brain**  
Markus Ploner, Joachim Gross, Lars Timmermann, and Alfons Schnitzler
- 10883 **Near-Optimal Human Adaptive Control across Different Noise Environments**  
Manu Chhabra and Robert A. Jacobs
- 10911 **Dysregulation of Brain-Derived Neurotrophic Factor Expression and Neurosecretory Function in *Mecp2* Null Mice**  
Hong Wang, Shyue-an Chan, Michael Ogier, David Hellard, Qifang Wang, Corey Smith, and David M. Katz

## Articles

### CELLULAR/MOLECULAR

- 10658 **The Orexin OX<sub>1</sub> Receptor Regulates Ca<sup>2+</sup> Entry via Diacylglycerol-Activated Channels in Differentiated Neuroblastoma Cells**  
Johnny Näsman, Genevieve Bart, Kim Larsson, Lauri Louhivuori, Hanna Peltonen, and Karl E. O. Åkerman
- 10677 **Switching of Ca<sup>2+</sup>-Dependent Inactivation of Ca<sub>v</sub>1.3 Channels by Calcium Binding Proteins of Auditory Hair Cells**  
Philemon S. Yang, Badr A. Alseikhan, Hakim Hiel, Lisa Grant, Masayuki X. Mori, Wanjun Yang, Paul A. Fuchs, and David T. Yue
- 10690 **Alternative Splicing of the Ca<sub>v</sub>1.3 Channel IQ Domain, a Molecular Switch for Ca<sup>2+</sup>-Dependent Inactivation within Auditory Hair Cells**  
Yiru Shen, Dejie Yu, Hakim Hiel, Ping Liao, David T. Yue, Paul A. Fuchs, and Tuck Wah Soong
- 10717 **Identified Motoneurons Involved in Sexual and Eliminative Functions in the Rat Are Powerfully Excited by Vasopressin and Tachykinins**  
Roch Ogier, Eliane Tribollet, Philippe Suarez, and Mario Raggenbass
- 10777 **Stereociliary Myosin-1c Receptors Are Sensitive to Calcium Chelation and Absent from Cadherin 23 Mutant Mice**  
Kelli R. Phillips, Song Tong, Richard Goodyear, Guy P. Richardson, and Janet L. Cyr
- 10888 **Polysialylated Neural Cell Adhesion Molecule Is Involved in Induction of Long-Term Potentiation and Memory Acquisition and Consolidation in a Fear-Conditioning Paradigm**  
Oleg Senkov, Mu Sun, Birgit Weinhold, Rita Gerardy-Schahn, Melitta Schachner, and Alexander Dityatev
- 10899 **Permeant Ion Effects on External Mg<sup>2+</sup> Block of NR1/2D NMDA Receptors**  
Anqi Qian and Jon W. Johnson
- 10916 **Inositol 1,4,5-Trisphosphate Receptor Type 1 in Granule Cells, Not in Purkinje Cells, Regulates the Dendritic Morphology of Purkinje Cells through Brain-Derived Neurotrophic Factor Production**  
Chihiro Hisatsune, Yukiko Kuroda, Takumi Akagi, Takashi Torashima, Hirokazu Hirai, Tsutomu Hashikawa, Takafumi Inoue, and Katsuhiko Mikoshiba

### DEVELOPMENT/PLASTICITY/REPAIR

- 10796 **Presynaptic Kainate Receptor Activation Is a Novel Mechanism for Target Cell-Specific Short-Term Facilitation at Schaffer Collateral Synapses**  
Hua Yu Sun and Lynn E. Dobrunz
- 10813 **Formation of Presynaptic Terminals at Predefined Sites along Axons**  
Shasta L. Sabo, Raquel A. Gomes, and A. Kimberley McAllister
- 10856 **Chondroitinase ABC Promotes Sprouting of Intact and Injured Spinal Systems after Spinal Cord Injury**  
A. W. Barritt, M. Davies, F. Marchand, R. Hartley, J. Grist, P. Yip, S. B. McMahon, and E. J. Bradbury
- 10868 **Role of Bone Morphogenetic Protein 2 in Retinal Patterning and Retinotectal Projection**  
Hiraki Sakuta, Hiroo Takahashi, Takafumi Shintani, Kazuma Etani, Akihiro Aoshima, and Masaharu Noda

## BEHAVIORAL/SYSTEMS/COGNITIVE

- 10667 **Nursing-Induced Somatosensory Cortex Plasticity: Temporally Decoupled Changes in Neuronal Receptive Field Properties Are Accompanied by Modifications in Activity-Dependent Protein Expression**  
Céline Rosselet, Yoh'i Zennou-Azogui, and Christian Xerri
- 10709 **Interleukin-6 Facilitates Lipopolysaccharide-Induced Disruption in Working Memory and Expression of Other Proinflammatory Cytokines in Hippocampal Neuronal Cell Layers**  
Nathan L. Sparkman, Jessica B. Buchanan, Jonathan R. R. Heyen, Jing Chen, James L. Beverly, and Rodney W. Johnson
- 10727 **Methodological Considerations on the Use of Template Matching to Study Long-Lasting Memory Trace Replay**  
Masami Tatsuno, Peter Lipa, and Bruce L. McNaughton
- 10743 **Neuromechanics of Multifunctionality during Rejection in *Aplysia californica***  
Hui Ye, Douglas W. Morton, and Hillel J. Chiel
- 10789 **Variations in the Human Pain Stress Experience Mediated by Ventral and Dorsal Basal Ganglia Dopamine Activity**  
David J. Scott, Mary M. Heitzeg, Robert A. Koeppe, Christian S. Stohler, and Jon-Kar Zubieta
- 10826 **Spatial and Temporal Properties of Cone Signals in Alert Macaque Primary Visual Cortex**  
Bevil R. Conway and Margaret S. Livingstone
- 10847 **Bladder Overactivity and Hyperexcitability of Bladder Afferent Neurons after Intrathecal Delivery of Nerve Growth Factor in Rats**  
Naoki Yoshimura, Nelson E. Bennett, Yukio Hayashi, Teruyuki Ogawa, Osamu Nishizawa, Michael B. Chancellor, William C. de Groat, and Satoshi Seki
- 10925 **Imaging Dedicated and Multifunctional Neural Circuits Generating Distinct Behaviors**  
Kevin L. Briggman and William B. Kristan Jr

## NEUROBIOLOGY OF DISEASE

- 10636 **Tau Nitration Occurs at Tyrosine 29 in the Fibrillar Lesions of Alzheimer's Disease and Other Tauopathies**  
Matthew R. Reynolds, Juan F. Reyes, Yifan Fu, Eileen H. Bigio, Angela L. Guillozet-Bongaarts, Robert W. Berry, and Lester I. Binder
- 10646 **Trigeminal Neuropathic Pain Alters Responses in CNS Circuits to Mechanical (Brush) and Thermal (Cold and Heat) Stimuli**  
Lino Becerra, Susie Morris, Shelly Bazes, Richard Gostic, Seth Sherman, Julie Gostic, Gautam Pendse, Eric Moulton, Steven Scrivani, David Keith, Boris Chizh, and David Borsook
- 10700 **Neural Basis of Dyslexia: A Comparison between Dyslexic and Nondyslexic Children Equated for Reading Ability**  
Fumiko Hoeft, Arvel Hernandez, Glenn McMillon, Heather Taylor-Hill, Jennifer L. Martindale, Ann Meyler, Timothy A. Keller, Wai Ting Siok, Gayle K. Deutsch, Marcel Adam Just, Susan Whitfield-Gabrieli, and John D. E. Gabrieli
- 10756 **GABAergic Synaptic Inhibition Is Reduced before Seizure Onset in a Genetic Model of Cortical Malformation**  
Stacey A. Trotter, Jaideep Kapur, Matthew J. Anzivino, and Kevin S. Lee

10768 **Subthalamic Stimulation-Induced Forelimb Dyskinesias Are Linked to an Increase in Glutamate Levels in the Substantia Nigra Pars Reticulata**

Sabrina Boulet, Emilie Lacombe, Carole Carcenac, Claude Feuerstein, Véronique Sgambato-Faure, Annie Poupard, and Marc Savasta

**Erratum:** In the feature This Week in the Journal for the October 4, 2006 issue, there was a typo in the last sentence of the Cellular/Molecular summary, titled “PSD-95 and Dendritic Branching *In Vitro*.” The last sentence should have read as follows: “Thus, it appears that PSD-95 can act as a stop signal for dendrite outgrowth and branching by a process that is activity independent.”

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://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](mailto:jn@sfn.org).