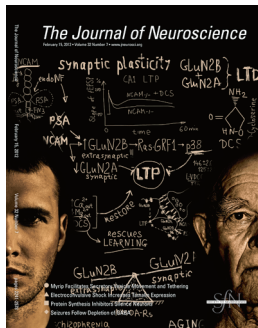


# The Journal of Neuroscience

February 15, 2012 • Volume 32 Number 7 • www.jneurosci.org



**Cover legend:** A summary of the effects of polysialic acid (PSA) and its predominant carrier, the neural cell adhesion molecule NCAM. Deficits in expression of these molecules impair hippocampal long-term potentiation and depression (LTP and LTD) in mice, and are linked to schizophrenia and aging in humans. Accumulating evidence suggests that PSA-NCAM regulates the balance in signaling through synaptic GluN2A versus extrasynaptic GluN2B, and that pathological conditions related to deficiency in PSA or NCAM can be pharmacologically compensated by modulation of GluN receptors. Cover design by Oleg Senkov and Alexander Dityatev. ©Nejron/Bigstockphoto.com—the image of young man; ©Nejron Photo/Fotolia.com—the image of old man. For more information, see the article by Kochlamazashvili et al. (pages 2263–2275).

## i This Week in The Journal

### Toolbox

- 2241 **Sex Differences in the Brain: The Not So Inconvenient Truth**  
Margaret M. McCarthy, Arthur P. Arnold, Gregory F. Ball, Jeffrey D. Blaustein, and Geert J. De Vries

### Journal Club

- 2248 **Extending the Study of Decision Values to Cases Where Options Are Presented Using Different Sensory Modalities**  
Bastiaan Oud and Géraldine Coppin
- 2250 **Memory Erasure, Enhanced Extinction and Disrupted Reconsolidation**  
Segev Barak and Sami Ben Hamida

### Brief Communications

- 2352 **Striatal  $\alpha 5$  Nicotinic Receptor Subunit Regulates Dopamine Transmission in Dorsal Striatum**  
Richard Exley, J. Michael McIntosh, Michael J. Marks, Uwe Maskos, and Stephanie J. Cragg

### Articles

#### CELLULAR/MOLECULAR

- 2357 **Mechanisms Underlying Signal Filtering at a Multisynapse Contact**  
Timotheus Budisantoso, Ko Matsui, Naomi Kamasawa, Yugo Fukazawa, and Ryuichi Shigemoto
- 2410 **The BDNF Val66Met Polymorphism Impairs Synaptic Transmission and Plasticity in the Infralimbic Medial Prefrontal Cortex**  
Siobhan S. Pattwell, Kevin G. Bath, Rosalia Perez-Castro, Francis S. Lee, Moses V. Chao, and Ipe Ninan
- 2485 **Stabilization of GABA<sub>A</sub> Receptors at Endocytic Zones Is Mediated by an AP2 Binding Motif within the GABA<sub>A</sub> Receptor  $\beta 3$  Subunit**  
Katharine R. Smith, James Muir, Yijian Rao, Marietta Browarski, Marielle C. Gruenig, David F. Sheehan, Volker Haucke, and Josef T. Kittler
- 2513 **Local Dendrodendritic Inhibition Regulates Fast Synaptic Transmission in Visual Thalamus**  
Shane R. Crandall and Charles L. Cox

- 2523 **Decrease in Tonic Inhibition Contributes to Increase in Dentate Semilunar Granule Cell Excitability after Brain Injury**  
Akshay Gupta, Fatima S. Elgammal, Archana Proddatur, Samik Shah, and Vijayalakshmi Santhakumar
- 2552 **Parasynaptic NMDA Receptor Signaling Couples Neuronal Glutamate Transporter Function to AMPA Receptor Synaptic Distribution and Stability**  
Larissa A. Jarzylo and Heng-Ye Man
- 2564 **Myrip Couples the Capture of Secretory Granules by the Actin-Rich Cell Cortex and Their Attachment to the Plasma Membrane**  
Sébastien Huet, Isabelle Fanget, Ouardane Jouannot, Patricia Meireles, Tim Zeiske, Nathanaël Larochette, François Darchen, and Claire Desnos

#### DEVELOPMENT/PLASTICITY/REPAIR

- 2252 **Tamalin Is a Critical Mediator of Electroconvulsive Shock-Induced Adult Neuroplasticity**  
Sudhirkumar U. Yanpallewar, Colleen A. Barrick, Mary Ellen Palko, Gianluca Fulgenzi, and Lino Tessarollo
- 2314 **Arg Kinase Regulates Prefrontal Dendritic Spine Refinement and Cocaine-Induced Plasticity**  
Shannon L. Gourley, Anastasia Olevska, M. Sloan Warren, Jane R. Taylor, and Anthony J. Koleske
- 2324 **Biglycan Is an Extracellular MuSK Binding Protein Important for Synapse Stability**  
Alison R. Amenta, Hilliary E. Creely, Mary Lynn T. Mercado, Hiroki Hagiwara, Beth A. McKechnie, Beatrice E. Lechner, Susana G. Rossi, Qiang Wang, Rick T. Owens, Emilio Marrero, Lin Mei, Werner Hoch, Marian F. Young, David J. McQuillan, Richard L. Rotundo, and Justin R. Fallon

#### BEHAVIORAL/SYSTEMS/COGNITIVE

- 2276 **Deliberation in the Motor System: Reflex Gains Track Evolving Evidence Leading to a Decision**  
Luc P. J. Selen, Michael N. Shadlen, and Daniel M. Wolpert
- 2287 **Incorporating Cross-Modal Statistics in the Development and Maintenance of Multisensory Integration**  
Jinghong Xu, Liping Yu, Benjamin A. Rowland, Terrence R. Stanford, and Barry E. Stein
- 2299 **Causal Links between Dorsal Medial Superior Temporal Area Neurons and Multisensory Heading Perception**  
Yong Gu, Gregory C. DeAngelis, and Dora E. Angelaki
- 2335 **Bias in the Brain: A Diffusion Model Analysis of Prior Probability and Potential Payoff**  
Martijn J. Mulder, Eric-Jan Wagenmakers, Roger Ratcliff, Wouter Boekel, and Birte U. Forstmann
- 2344 **Hippocampal Histone Acetylation Regulates Object Recognition and the Estradiol-Induced Enhancement of Object Recognition**  
Zaorui Zhao, Lu Fan, Ashley M. Fortress, Marissa I. Boulware, and Karyn M. Frick
- 2377 **Neurosilence: Profound Suppression of Neural Activity following Intracerebral Administration of the Protein Synthesis Inhibitor Anisomycin**  
Arjun V. Sharma, Frank E. Nargang, and Clayton T. Dickson

- 2388 **Role of Neurokinin B in the Control of Female Puberty and Its Modulation by Metabolic Status**  
Víctor M. Navarro, Francisco Ruiz-Pino, Miguel A. Sánchez-Garrido, David García-Galiano, Samuel J. Hobbs, María Manfredi-Lozano, Silvia León, Susana Sangiao-Alvarellos, Juan M. Castellano, Donald K. Clifton, Leonor Pinilla, Robert A. Steiner, and Manuel Tena-Sempere
- 2422 **Spatial Updating Depends on Gaze Direction Even after Loss of Vision**  
Johanna Reuschel, Frank Rösler, Denise Y. P. Henriques, and Katja Fiehler
- 2442 **Hierarchical Processing of Face Viewpoint in Human Visual Cortex**  
Vadim Axelrod and Galit Yovel
- 2453 **Neuronal Activity in the Human Subthalamic Nucleus Encodes Decision Conflict during Action Selection**  
Kareem A. Zaghoul, Christoph T. Weidemann, Bradley C. Lega, Jurg L. Jaggi, Gordon H. Baltuch, and Michael J. Kahana
- 2461 **Role of Amygdala Central Nucleus in Aversive Learning Produced by Shock or by Unexpected Omission of Food**  
Robert J. Purgert, Daniel S. Wheeler, Michael A. McDannald, and Peter C. Holland
- 2473 **Temporal Convergence of Dynamic Cell Assemblies in the Striato-Pallidal Network**  
Avital Adler, Shiran Katabi, Inna Finkes, Zvi Israel, Yifat Prut, and Hagai Bergman
- 2538 ***Kcna1* Gene Deletion Lowers the Behavioral Sensitivity of Mice to Small Changes in Sound Location and Increases Asynchronous Brainstem Auditory Evoked Potentials But Does Not Affect Hearing Thresholds**  
Paul D. Allen and James R. Ison
- 2544 **Nucleus Accumbens Response to Incentive Stimuli Anticipation in Children of Alcoholics: Relationships with Precursive Behavioral Risk and Lifetime Alcohol Use**  
Wai-Ying Wendy Yau, Jon-Kar Zubieta, Barbara J. Weiland, Preeti G. Samudra, Robert A. Zucker, and Mary M. Heitzeg

#### NEUROBIOLOGY OF DISEASE

- 2263 **Restoration of Synaptic Plasticity and Learning in Young and Aged NCAM-Deficient Mice by Enhancing Neurotransmission Mediated by GluN2A-Containing NMDA Receptors**  
Gaga Kochlamazashvili, Olena Bukalo, Oleg Senkov, Benedikt Salmen, Rita Gerardy-Schahn, Andreas K. Engel, Melitta Schachner, and Alexander Dityatev
- 2398 **Striatal D2 Receptors Regulate Dendritic Morphology of Medium Spiny Neurons via Kir2 Channels**  
Maxime Cazorla, Mariya Shegda, Bhavani Ramesh, Neil L. Harrison, and Christoph Kellendonk
- 2430 **Regulation of Mitochondrial Transport and Inter-Microtubule Spacing by Tau Phosphorylation at the Sites Hyperphosphorylated in Alzheimer's Disease**  
Kourosh Shahpasand, Isao Uemura, Taro Saito, Tsunaki Asano, Kenji Hata, Keitaro Shibata, Yoko Toyoshima, Masato Hasegawa, and Shin-ichi Hisanaga
- 2499 **Transition to Seizure: Ictal Discharge Is Preceded by Exhausted Presynaptic GABA Release in the Hippocampal CA3 Region**  
Zhang J. Zhang, Julius Koifman, Damian S. Shin, Hui Ye, Carlos M. Florez, Liang Zhang, Taufik A. Valiante, and Peter L. Carlen

2578 **Correction:** The article “Compartmentalization of the GABA<sub>B</sub> Receptor Signaling Complex Is Required for Presynaptic Inhibition at Hippocampal Synapses” by Tal Laviv, Irena Vertkin, Yevgeny Berdichevsky, Hilla Fogel, Inbal Riven, Bernhard Bettler, Paul A. Slesinger, and Inna Slutsky originally appeared on pages 12523–12532 of the August 31, 2011 issue. A correction to that article appears on page 2578.

---

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).