This Week in The Journal

Editorial

Consideration of Sample Size in Neuroscience Studies

Viewpoints

Decoding Neurotransmitter Switching: The Road Forward
Hui-quan Li, Marta Pratelli, Swetha Godavarthi, Stefania Zambetti, and Nicholas C. Spitzer

Research Articles

CELLULAR/MOLECULAR

Divergent Synaptic Scaling of Miniature EPSCs following Activity Blockade in Dissociated Neuronal Cultures
Amanda L. Hanes, Andrew G. Koesters, Ming-fai Fong, Haider F. Altimimi, David Stellwagen, Peter Wenner, and Kathrin L. Engisch

Frequency-Dependent Block of Excitatory Neurotransmission by Isoflurane via Dual Presynaptic Mechanisms
Han-Ying Wang, Kohgaku Eguchi, Takayuki Yamashita, and Tomoyuki Takahashi

DEVELOPMENT/PLASTICITY/REPAIR

Increased Retinoic Acid Catabolism in Olfactory Sensory Neurons Activates Dormant Tissue-Specific Stem Cells and Accelerates Age-Related Metaplasia
Sofia Häglin, Anna Berghard, and Staffan Bohm

SYSTEMS/CIRCUITS

Brain-Wide Mapping of Water Flow Perception in Zebrafish
Gilles Vanwalleghem, Kevin Schuster, Michael A. Taylor, Itia A. Favre-Bulle, and Ethan K. Scott

Intrinsic Plasticity of Cerebellar Purkinje Cells Contributes to Motor Memory Consolidation
Dong Cheol Jang, Hyun Geun Shim, and Sang Jeong Kim

Dissociation of Unit Activity and Gamma Oscillations during Vocalization in Primate Auditory Cortex
Joji Tsunada and Steven J. Eliades

Categorical Signaling of the Strongest Stimulus by an Inhibitory Midbrain Nucleus
Hannah M. Schryver, Malgorzata Straka, and Shreesh P. Mysore

Cover legend: This image shows a coronal section of an olfactory bulb from a Gad1-GFP+/−:GluT1-Cre+/−:LSL-H2B mCherry+/− mouse that was generated to perform whole-brain analysis of glutamate-to-GABA neurotransmitter switching. Red dots indicate the nuclei of glutamatergic neurons, while the green GFP signal fills the cell bodies of neurons expressing GABA at the time of the experiment. Cells co-expressing GABA and glutamate will therefore be mCherry+ and GFP+. While mCherry+/GFP+ neurons are also present under normal conditions, their number will increase when neurotransmitter switching occurs. For more information, see the Viewpoints article by Li et al. (pages 4078–4089).
Modeling the Short-Term Dynamics of in Vivo Excitatory Spike Transmission
Abed Ghanbari, Naixin Ren, Christian Keine, Carl Stoelzel, Bernhard Englitz, Harvey A. Swadlow, and Ian H. Stevenson

Synchronous Infra-Slow Oscillations Organize Ensembles of Accessory Olfactory Bulb Projection Neurons into Distinct Microcircuits

BEHAVIORAL/COGNITIVE

Drosophila Middle-Term Memory: Amnesiac is Required for PKA Activation in the Mushroom Bodies, a Function Modulated by Neprilysin 1
Oriane Turrel, Yasmine Rabah, Pierre-Yves Plaçais, Valérie Goguel, and Thomas Preat

Cerebellar–Motor Cortex Connectivity: One or Two Different Networks?
Danny A. Spampinato, Pablo A. Celnik, and John C. Rothwell

Concerted Actions of Octopamine and Dopamine Receptors Drive Olfactory Learning
John Martin Sabandal, Paul Rafael Sabandal, Young-Cho Kim, and Kyung-An Han

NEUROBIOLOGY OF DISEASE

Urokinase-Type Plasminogen Activator Protects Cerebral Cortical Neurons from Soluble Aβ-Induced Synaptic Damage
Ariel Diaz, Paola Merino, Ji-Dong Guo, Manuel A. Yepes, Patrick McCann, Tapasya Katta, Elise M. Tong, Enrique Torre, Srikant Rangaraju, and Manuel Yepes
