IN BRIEF

SYNAPTIC TRANSMISSION

Glycinergic transmission shaped by the corelease of GABA in a mammalian auditory synapse

Lu, T., Rubio, M. E. & Trussell, L. O. *Neuron* **57**, 524–535 (2008)

Glycinergic neurons in the auditory brainstem nucleus form part of the neural circuitry that underlies sound localization. Here the authors show that GABA, a weak partial agonist of glycine receptors, accelerates the decay of glycinergic synaptic responses by acting directly on the glycine-binding subunit of the glycine receptor. Given that GABA and glycine are co-released from many inhibitory neurons in the brainstem and spinal cord, this form of co-transmission could be a widespread strategy for accelerating inhibitory synaptic currents.

COGNITIVE NEUROSCIENCE

A specific and rapid neural signature for parental instinct

Kringelbach, M. L. *et al. PLoS One* **3**, e1664 (2008)

Babies are thought to prompt an 'innate' response that contributes to parental behaviour, but the neural correlates are unknown. Using magnetoencephalography in adults, Alan Stein and colleagues show that the medial orbitofrontal cortex, an area that has been linked with reward processing and emotion, becomes strongly activated in response to unfamiliar infant faces but not to unfamiliar adults. This finding, which was observed in males and females with and without children, could represent the neural basis of parental instinct. The signal was lower in people with postnatal depression, suggesting that it could be used to predict the risk of developing this condition.

LANGUAGE

Communicative signaling activates 'Broca's' homolog in chimpanzees

Taglialatela, J. P., Russell, J. L., Schaeffer, J. A. & Hopkins, W. D. *Curr. Biol.* 28 Feb 2008 (doi:10.1016/j.cub.2008.01.049)

Broca's area, located in the left inferior frontal gyrus (IFG), is one of the key cerebral centres for the execution of language in humans. The authors used fMRI to study chimpanzees during communicative behaviours and observed significant activation in the left IFG and other brain centres. This suggests that a neuroanatomical equivalent of Broca's area exists in chimpanzees and supports the idea of a common ancestor of chimpanzees and humans in the evolution of communication.

MOLECULAR NEUROSCIENCE

CRF facilitates calcium release from intracellular stores in midbrain dopamine neurons

Riegel, A. C. & Williams, J. T. *Neuron* **57**, 559–570 (2008)

Mesocorticolimbic dopamine neurons signal reinforcement, driving behaviours such as drug abuse. These neurons have receptors for corticotrophin-releasing factor (CRF), a peptide known to mediate stress responses, but the precise role of these receptors are unknown. Using midbrain slices, the authors showed that, in dopamine neurons, CRF stimulated Ca^{2+}-release from intracellular stores through a protein kinase A-dependent mechanism; this in turn potentiated the outward current through Ca^{2+}-sensitive K^+ channels. This study reveals a potential molecular mechanism by which stress influences the regulation of neuronal excitability and synaptic plasticity in dopamine neurons.