

IN BRIEF

MOLECULAR NEUROSCIENCE**S-nitrosylation of histone deacetylase 2 induces chromatin remodelling in neurons**

Nott, A. *et al. Nature* 27 Aug 2008 (doi:10.1038/nature07238)

The precise mechanisms through which neurotrophic factors influence gene expression to regulate growth and survival are largely unknown. In this study, a known mediator of brain-derived neurotrophic factor signalling in neurons, nitric oxide, was found to induce S-nitrosylation of histone deacetylase 2 (HDAC2). This modification reduced HDAC2's ability to associate with chromatin, thereby facilitating the acetylation of histones H3 and H4 and resulting in the expression of genes that regulate dendritic growth and branching.

DEVELOPMENT**Pubertal hormones modulate the addition of new cells to sexually dimorphic brain regions**

Ahmed, E. I. *et al. Nature Neurosci.* **11**, 995–997 (2008)

Sexual differentiation of the nervous system was thought to take place primarily during early development. However, this study shows that gonadal steroids actively contribute to the addition of new cells to sexually dimorphic brain regions during puberty. Prepubertal gonadectomy in rats eliminated the sex-biased addition of cells to three sexually dimorphic brain nuclei, thus eliminating the differences in structure, and potentially function, between these areas in males and females. Whether gonadal hormones modulate the proliferation and/or survival of cells remains to be determined.

DECISION MAKING**Subliminal instrumental conditioning demonstrated in the human brain**

Pessiglione, M. *et al. Neuron* **59**, 561–567 (2008)

Can subliminal cues influence decision making? Participants were asked to make choices that could lead to financial gains or losses. In each trial a masked cue indicating the optimal choice for the subsequent trial was flashed onto a screen. Although participants did not consciously perceive the cues, they seemed to learn from them: as the task progressed, the percentage of 'correct' responses increased and ventral-striatum responses to masked 'reward' and 'punishment' cues increased and decreased, respectively. The findings show that associative learning of subliminal signals plays a part in decision making.

NEUROANATOMY**Latency and selectivity of single neurons indicate hierarchical processing in the human medial temporal lobe**

Mormann, F. *et al. J. Neurosci.* **28**, 8865–8872 (2008)

Some of the neurons in the human temporal lobe respond selectively to particular visual stimuli. However, it is unknown at what stage of visual processing this selectivity develops. The authors showed that individual parahippocampal neurons responded earlier and to more visual stimuli than entorhinal, hippocampal and amygdala neurons. These data suggest that there is a hierarchical pathway in the temporal lobe along which visual-stimulus representations gradually become more specific.