IN BRIEF

AGEING

Attentuation of age-related changes in mouse neuromuscular synapses by caloric restriction and exercise

Valdez, G. *et al. Proc. Natl Acad. Sci. USA* 2 Aug 2010 (doi:10.1073/pnas.1002220107)

Age-related cognitive decline might be due to synaptic alterations. Here, the authors studied the effects of caloric restriction and exercise on the neuromuscular junction (NMJ) in mice. Life-long caloric restriction reduced many age-related structural changes in the NMJ, and one month of running-wheel exercise in aged mice partially reversed NMJ synaptic changes. Thus, ageing induces synaptic changes that can be partially reversed using lifespan-extending strategies.

NEUROIMMUNOLOGY

Chronic systemic infection exacerbates ischemic brain damage via a CCL5 (regulated on activation, normal T-cell expressed and secreted)-mediated proinflammatory response in mice

Dénes, Á. *et al. J. Neurosci.* **30**, 10086–10095 (2010)

Systemic inflammation can contribute to, and impair, the outcome of ischaemic brain damage. To investigate the underlying mechanisms, the authors infected mice with a parasite to induce an inflammatory response dominated by helper T cells (T_H1 and T_H17 cells). The infection caused prolonged brain inflammation, microvascular dysfunction and exacerbated ischaemic brain damage. Neutralizing the chemokine CCL5 before ischaemia prevented the effect of infection on ischaemic brain damage. These data indicate that CCL5 mediates the effect of peripheral inflammation on brain injury.

SOCIAL NEUROSCIENCE

Supramodal representations of perceived emotions in the human brain

Peelen, M. V. *et.al. J. Neurosci.* **30**, 10127–10134 (2010)

Do particular brain regions encode other individuals' emotional cues in a modality-independent way? The authors used functional MRI to scan participants who were observing clips of people expressing emotions through changes in body, face and voice. Multivoxel pattern analysis revealed emotion category-specific activity patterns in the medial prefrontal cortex and the superior temporal sulcus that were independent of emotion intensity or modality. This indicates that these areas represent other individuals' emotions in an abstract manner.

DEVELOPMENTAL NEUROSCIENCE

Olig1 and *Olig2* triplication causes developmental brain defects in Down syndrome

Chakrabarti, L. *et al. Nature Neurosci.* **13**, 927–934 (2010)

The authors showed that 1-week-old Ts65Dn mice, an established model of Down's syndrome, had fewer forebrain excitatory neurons and more interneurons than control mice. Expression of the oligodendrocyte transcription factor genes *Olig1* and *Olig2* was elevated in Ts65Dn mouse forebrains. Normalization of *Olig1* and *Olig2* dosage rescued the 'inhibitory' Ts65Dn forebrain phenotype. These data point to *Olig1* and *Olig2* as potential biomarkers or targets for therapeutic intervention.