

IN BRIEF

➤ ADDICTION

Striatal microRNA controls cocaine intake through CREB signalling

Hollander, J. A. *et al. Nature* **466**, 197–202 (2010)

The authors investigated whether microRNAs (miRNAs) have a role in cocaine-induced adaptive responses in brain reward systems. Rats with 6 hours of daily access to cocaine showed upregulated striatal expression of miR-212. Lentiviral overexpression of miR-212 reduced the motivation to consume cocaine. *In vitro*, miR-212 enhanced cocaine-induced cyclic AMP-responsive element-binding protein (CREB) signalling by increasing cAMP levels and the expression of the CREB co-activator transducer of regulated CREB (TORC). Lentiviral overexpression of striatal TORC reduced cocaine intake. These data suggest that miR-212 protects against the development of compulsive drug-taking by amplifying striatal CREB–TORC signalling.

➤ NEURODEGENERATIVE DISEASE

Regulation of parkinsonian motor behaviours by optogenetic control of basal ganglia circuitry

Kravitz, A. V. *et al. Nature* 7 Jul 2010 (doi:10.1038/nature09159)

In the basal ganglia, activation of the 'direct' and 'indirect' pathways is thought to respectively facilitate and inhibit movement. The authors tested this model in mice and showed that bilateral activation of medium spiny neurons (MSNs) in the indirect pathway, through optogenetic control, increased the time spent freezing and reduced the time spent in locomotion. Activation of MSNs in the direct pathway had the opposite effect and restored movement in a mouse model of Parkinson's disease.

➤ NEUROECONOMICS

Neural responses to unattended products predict later consumer choices

Tusche, A., Bode, S. & Haynes, J.-D. *J. Neurosci.* **30**, 8024–8031 (2010)

Do we evaluate products without paying attention to them? Participants were shown images of cars during functional MRI (fMRI) scanning and were told to evaluate the cars or to perform a demanding task that did not involve the car images. Multivariate decoding of the fMRI data showed that activity in the insula and medial prefrontal cortex during image presentation predicted — with similar accuracy in both groups — the participants' stated willingness to buy the product. This indicates that automatic processing of products may guide economic decision making.

➤ SOCIAL NEUROSCIENCE

The neuropeptide oxytocin regulates parochial altruism in intergroup conflict among humans

de Dreu, C. K. W. *et al. Science* **328**, 1408–1411 (2010)

Oxytocin stimulates social bonding in rodents and promotes interpersonal trust and cooperation in humans. Here, the authors tested whether it differentially regulates trust and competition towards 'in-groups' and 'out-groups'. Participants received intranasal oxytocin or a placebo before taking part in games in which each decision had financial consequences for members of a participant's in-group and an out-group. Oxytocin administration increased trust and cooperation towards in-group members without increasing 'hate' and distrust towards out-group members. This indicates that oxytocin promotes a 'tend and defend' form of parochial altruism.