# IN BRIEF

**DOI:**
10.1038/nrn2249

## DECISION MAKING

### To do or not to do: the neural signature of self-control

Brass, M. & Haggard, P. *J. Neurosci.* **27**, 9141–9145 (2007)

Planning and carrying out intentional actions is a crucial part of everyday life. The authors investigated the brain networks that underlie the decision whether or not to carry out an intended action. Using functional MRI, they found differential activity in the dorsal frontomedian cortex (dFMC) in trials in which participants prepared to press a key and then cancelled the action at the last moment, compared with trials in which the intended action was followed through. This finding suggests that the dFMC is involved in inhibiting intended actions and the authors speculate that this activity may be the basis of 'self-control'.

## MOLECULAR NEUROSCIENCE

### Extracellular stimuli specifically regulate localized levels of individual neuronal mRNAs

Willis, D. E. *et al. J. Cell Biol.* **178**, 965–980 (2007)

Localized protein synthesis enables neurons to respond rapidly to changes in the environment. Here, the authors examined the effects of both growth-promoting and growth-inhibiting ligands on the localization of a broad population of mRNAs in regenerating sensory neurons. They found that these extracellular factors differentially regulate the transport of specific mRNAs from the cell body to subcellular regions adjacent to the ligand source, thus influencing local protein synthesis.

## NEURODEGENERATIVE DISEASE

### HIV/gp120 decreases adult neural progenitor cell proliferation via checkpoint kinase-mediated cell-cycle withdrawal and G1 arrest

Okamoto, S. *et al. Cell Stem Cell* **1**, 230–236 (2007)

HIV-associated dementia (HAD) has been associated with reduced hippocampal neurogenesis, but the underlying molecular mechanisms are unclear. The authors showed that the HIV-envelope glycoprotein gp120, which is known to contribute to HAD pathology, reduced the proliferation of neural progenitor cells *in vitro* and *in vivo* by prolonging the G1 phase of the cell cycle. They also demonstrated the involvement of a signalling cascade comprising MAPK, MAPK-activated protein-kinase 2 and Cdc25B/C activities in these effects, providing new information on the molecular mechanisms that underlie HAD.

## PSYCHIATRIC DISORDERS

### Activation of mGlu2/3 receptors as a new approach to treat schizophrenia: a randomized phase 2 clinical trial

Patil, S.T. *et al. Nature Med.* 2 Sept 2007 (doi:10.1038/nm1632)

Most currently prescribed antipsychotics act on dopamine receptors, however, it has been suggested that modulating glutamatergic signalling might be an alternative treatment strategy. This paper presents the results of a clinical proof-of-concept study, in which an agonist of metabotropic glutamate receptors 2 and 3 was administered to patients with schizophrenia. The drug was shown to reduce many symptoms of the disorder, providing further evidence for the 'glutamate hypothesis' of schizophrenia and offering the hope of a new treatment approach.