

IN BRIEF

➤ POLARITY

LRK-1, a *C. elegans* PARK8-related kinase, regulates axonal-dendritic polarity of SV proteins.

Sakaguchi-Nakashima, A. *et al. Curr. Biol.* **17**, 592–598 (2007)

lrk-1 deletion in *Caenorhabditis elegans* causes defects in the polarization of synaptic vesicle proteins: instead of localizing strictly to axons, these proteins were found at both axonal and dendritic terminals. Surprisingly, this effect was dependent on *unc-101*, a gene encoding a subunit of the AP-1 clathrin adaptor complex that mediates the transport of odorant receptors in sensory neurons. The authors provide evidence that LRK-1 might function in the Golgi to exclude synaptic vesicle proteins from a UNC-101-dependent vesicle-sorting pathway that results in dendrite-specific transport.

➤ PSYCHIATRIC DISORDERS

Association and linkage of allelic variants of the dopamine transporter gene in ADHD.

Friedel, S. *et al. Mol. Psychiatry* 10 April 2007 (doi:10.1038/sj.mp.4001986)

A genome-wide scan previously identified an attention deficit/hyperactivity disorder (ADHD) linkage peak on the distal part of the short arm of chromosome 5, which includes the dopamine transporter gene (*DAT1*). Friedel *et al.* investigated the *DAT1* gene and the adjacent loci on chromosome 5 for association and linkage by genotyping 30 single nucleotide polymorphisms (SNPs) in 329 families with 523 ADHD-affected offspring. One SNP located in intron 4 of the *DAT1* gene was found to be strongly associated with ADHD among the tested patients, confirming a role for *DAT1* in the aetiology of this childhood disorder.

➤ MICROGLIA

UDP acting at P2Y₆ receptors is a mediator of microglial phagocytosis.

Koizumi, S. *et al. Nature* 10 April 2007 (doi:10.1038/nature05704)

ATP released from injured neurons has been shown to trigger microglial chemotaxis. Now, researchers show that leakage of endogenous UDP from damaged hippocampal neurons is required to stimulate microglial phagocytosis of neuronal debris both *in vitro* and *in vivo*. UTP activates metabotropic P2Y₆ receptors in microglia that may function as sensors of neuronal damage and could be a potential target for pharmacological modulation of microglia activity.

➤ ADDICTION

Specific alterations of extracellular endocannabinoid levels in the nucleus accumbens by ethanol, heroin, and cocaine self-administration.

Caillé, S. *et al. J. Neurosci.* **27**, 3695–3702 (2007)

Endocannabinoids may be involved in drug addiction, but direct evidence that drugs affect the endocannabinoid system has been lacking. The authors show that in rats, self-administration of ethanol and heroin, but not cocaine, changes endocannabinoid levels in the nucleus accumbens, an area involved in reward processing. In addition, intra-accumbens infusion of an endocannabinoid receptor antagonist reduces ethanol and heroin, but not cocaine self-administration. Together, these data indicate that endocannabinoids are involved in the motivational properties of some, but not all, drugs of abuse.

DOI:
10.1038/nrn2145