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IN BRIEF

NEURAL DEVELOPMENT

Activating outgrowth

The amyloid precursor protein (APP) has been a focus of research into Alzheimer's disease; however, its physiological role remains unclear. Soldano and colleagues now show that ~25% of *Drosophila melanogaster* lacking APP-like (Appl) — the fly homologue of APP — exhibited axonal defects in a subset of neurons within the mushroom body, a structure associated with learning and memory in flies. The WNT–planar cell polarity (PCP) signalling pathway is known to promote axonal outgrowth, and the authors found that Appl activates this pathway via activation of Abl kinase. Finally, they showed that Appl and human APP can both form complexes with PCP receptors. Thus, Appl modulates WNT–PCP signalling to regulate axonal outgrowth in the developing mushroom body.

ORIGINAL RESEARCH PAPER Soldano, A. *et al.* The *Drosophila* homologue of the amyloid precursor protein is a conserved modulator of Wnt PCP signaling. *PLoS Biol.* **11**, e1001562 (2013)

SENSORY SYSTEMS

The asymmetric niches

In the zebrafish brain, neurons born during adulthood in the ventricular–subventricular zone (V–SVZ) of the ventricular wall in each hemisphere migrate towards and become incorporated into the olfactory bulb. Kishimoto *et al.* examined whether interhemispheric asymmetry exists between these neural stem niches, as a seemingly lateralized circuit connects the olfactory bulb to higher brain regions. The authors found that expression of the neural zinc-finger protein Myt1 was largely confined to adult-born neurons in the left V–SVZ. Moreover, they showed that left but not right olfactory sensory deprivation eliminated this lateralized expression pattern and impaired the behavioural response to a normally attractive amino acid mixture. These results indicate that interhemispheric differences in adult-born neurons may be induced by olfactory inputs and may result in functional asymmetry in neurons in the olfactory bulb.

ORIGINAL RESEARCH PAPER Kishimoto, N. *et al.* Interhemispheric asymmetry of olfactory input-dependent neuronal specification in the adult brain. *Nature Neurosci.* 19 May 2013 (doi:10.1038/nn.3409)

CIRCADIAN RHYTHMS

Translating time-keeping

Transcriptional control is an important regulator of circadian time-keeping; however, the role of post-transcriptional control in this process remains to be fully elucidated. Now, two studies in *Drosophila melanogaster* show that Ataxin-2 (Atx2) promotes the translation of Period (Per) — a crucial driver of circadian rhythms — in circadian pacemaker neurons. Both studies found that RNAi-mediated knockdown of Atx2 expression in circadian pacemaker neurons lengthened the circadian periods of locomotor behaviour of flies that were kept under constant darkness and also increased the arrhythmicity of these periods. Further investigation revealed that these effects were associated with a decrease in the abundance of Per. The protein Twenty-four (Tyf) is known to activate Per translation. Both studies found that Atx2 and Tyf can be found together in protein complexes and that Atx2 is required for Tyf-induced translation of Per.

ORIGINAL RESEARCH PAPERS Lim, C. & Allada, R. ATAXIN-2 activates PERIOD translation to sustain circadian rhythms in *Drosophila*. *Science* **340**, 875–879 (2013) | Zhang, Y. *et al.* A role for *Drosophila* ATX2 in activation of PER translation and circadian behavior. *Science* **340**, 879–882 (2013)

CORRECTION

Translating time-keeping

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The protein Twenty-four (Tyf) was incorrectly abbreviated as 'Tyr'.