

## IN BRIEF

**CIRCADIAN RHYTHMS****NuRD sets the CLOCK**

The mammalian circadian clock is regulated by a negative feedback loop that comprises period (PER) and cryptochrome (CRY) protein complexes; they bind to the DNA-bound transcription factor CLOCK–BMAL1 to repress their own expression. In this study, Kim *et al.* show that mouse PER complexes contain several subunits of the NuRD transcriptional corepressor, whereas two other NuRD subunits, CHD4 and MTA2, associate with CLOCK–BMAL1. Knockdown of NuRD components showed that MTA2 and MBD2 promote PER-mediated transcriptional repression; surprisingly, CHD4 seems to promote CLOCK–BMAL1 transcriptional activity. The authors propose a model in which NuRD components are split between CLOCK–BMAL1 and the PER complex; the fully functional NuRD complex is reconstituted during the circadian negative feedback phase, when PER complexes target the remaining components to CLOCK–BMAL1, resulting in repression.

**ORIGINAL RESEARCH PAPER** Kim, J. Y., Kwak, P. B. & Weitz, C. J.

Specificity in circadian clock feedback from targeted reconstitution of the NuRD corepressor. *Mol. Cell* <http://dx.doi.org/10.1016/j.molcel.2014.10.017> (2014)

**NON-CODING RNA****Parasite exosomes deliver RNA to hosts**

In this study, the authors show that the secretory products of the rodent gastrointestinal parasite *Heligmosomoides polygyrus* contain small RNAs — mostly nematode microRNAs (miRNAs) and the nematode homologues of Y RNAs (which have been implicated in DNA replication in humans) — that are encapsulated by exosome-like vesicles. In mouse airways, these nematode-derived exosomes suppressed type 2 innate immune responses, and they were internalized by mouse epithelial cells *in vitro*. Cells that have taken up the miRNA-containing vesicles exhibited changes in gene expression levels. Notably, using a reporter assay, the authors showed that three secreted nematode miRNAs could potentially downregulate the expression of the phosphatase *Dusp1*. As *Dusp1* was previously implicated in decreased susceptibility to *H. polygyrus*, reducing *Dusp1* levels could promote parasite survival.

**ORIGINAL RESEARCH PAPER** Buck, A. H. *et al.* Exosomes secreted by nematode parasites transfer small RNAs to mammalian cells and modulate innate immunity. *Nature Commun.*

<http://dx.doi.org/10.1038/ncomms6488> (2014)

**MORPHOGENESIS****Getting cells moving**

Epithelial tubes arise as short buds, and during mid-embryogenesis they undergo dramatic transformations, elongating and narrowing. This process occurs in the absence of cell proliferation and is accompanied by cell rearrangements. Saxena *et al.* used fly renal tubules to investigate the mechanism driving such transformations and found that elongation results from polarized cell intercalation that leads to a decrease in cell number around the lumen and an increase in tube length. Oriented cell intercalation is directed by epidermal growth factor (EGF) signalling from specific cells that are located at the distal tubule tip. The resulting acquisition of planar cell polarity causes the asymmetrical accumulation of the motor protein myosin II in the basal cell cortex, and pulsatile and polarized cell contraction, which enables cell movement.

**ORIGINAL RESEARCH PAPER** Saxena A. *et al.* Epidermal growth factor signalling controls myosin II planar polarity to orchestrate convergent extension movements during *Drosophila* tubulogenesis. *PLoS Biol.* **12**, e1002013 (2014)