IN BRIEF

AGING

Understanding bat spans

Wilkinson, G.S. and Adams, D.M. *Biol Lett* **15**, 20180860 (2019)

Broadly, bats live quite a long time relative to their body size. Understanding why intrigues many researchers interested in aging and longevity. Recently, Gerald Wilkinson and Danielle Adams from the University of Maryland reconstructed size-adjusted longevity quotients for bats using modern molecular phylogenies and then analyzed several factors that might explain lifespan differences between lineages.

Their results suggest that 'extreme' longevity evolved at least four times in bats, and that the ancestral bat lived 2.6 times longer than a similarly sized mammal. Hibernation seems to be a key factor among the longest-lived bats—the exception, a non-hibernating vampire bat, does undergo torpor, suggesting that body temperature plays a role. Among the non-hibernators, cave-roosters and species where males and females are about the same size tend to live the longest. *EPN*

https://doi.org/10.1038/s41684-019-0318-6

GENE THERAPY

CRISPR goes prenatal

Alapati, D. et al. *Sci Transl Med* **11**, eaav8375 (2019)

CRISPR-based gene editing therapies are making their way towards the clinic. There's postnatal potential for treating a number of monogenic diseases, and new research in mice suggests the gene editing tool could work prenatally too.

Working with two mouse models of monogenic lung diseases that are lethal to pups within a few hours of birth, researchers have demonstrated that CRISPR-Cas9 vectors can correct mutations in developing mouse lungs in utero. Delivery was achieved via injection into the dam's amniotic fluid, which is inhaled by the fetus and brings the tool to the developing lung tissue. Lung function and survival improved. Much remains to be refined, but the proof-of-concept study suggests that prenatal gene editing is feasible, an advance necessary to treat congenital diseases that are fatal to newborns. *EPN*

https://doi.org/10.1038/s41684-019-0319-5

IMAGING

Proprioceptors seen with SCAPE

Vaadia, R.D. et al. *Curr Biol* **29**, 935–944 (2019)

Swept confocally aligned planar excitation (SCAPE) microscopy is a multispectral, high-speed technique to image individual cells in behaving animals. Its developers at Columbia University have used it to broadly record neurons in crawling *Drosophila* larvae in prior studies. In their most recent report, they use SCAPE microscopy to home in on a specific type of neuron, proprioceptors. These neurons provide feedback about body position and are thought to be activated by different types of motion, though recordings in soft-bodied organisms such as fly larvae hadn't been achieved before. With tweaks made to improve resolution and widen the field of view to capture the entire animal, the team imaged tagged proprioceptors as the larvae crawled and moved its head. Activity of different proprioceptors was sequential, suggesting different cells are responsible for monitoring deformation of the body wall. *EPN*

https://doi.org/10.1038/s41684-019-0320-z

ANIMAL BEHAVIOR

Ethology…in…space…

Ronca, A.E. et al. *Sci Rep* **9**, 4717 (2019)

Cohorts of mice have regularly joined astronauts on the International Space Station since the first NASA Rodent Research Mission launched in 2014. They inhabit specially designed cages and, like their human counterparts, must adjust to the effects of microgravity—that's why they're there in the first place. The cages are filmed primarily to keep an eye on the health of the mousetronauts during their weeks in space, but the recordings also offer insight into how the mice adapt. NASA scientists recently described mouse behavior in microgravity in *Scientific Reports*. The mice generally acted like mice: they moved around; they groomed; they ate; they even latched their hind legs and tails on to the habitat grates and stretched in a way that resembled hindlimb rearing. Younger mice also took to racing in circles, for reasons still unknown. *EPN*

https://doi.org/10.1038/s41684-019-0321-y