DEVELOPMENTAL BIOLOGY

Effect of *ASH1L* on neurodevelopment

Yan, Y., Tian, M. et al. *Neuron* (2022) <https://doi.org/10.1016/j.neuron.2021.12.035>

Brain development is modulated by gene expression, which is itself influenced by chromatin remodelers, including histone methyltransferases. *ASH1L* encodes a histone methyltransferase, and *ASH1L* mutations have been associated with autism spectrum disorder (ASD). However, the impact of the gene mutant on brain, behavior and ASD pathology is unclear.

A recent study shows that *Ash1l* haploinsufficiency or its deletion in the forebrain of mice induces synaptic pruning deficits and autistic-like behavior via a direct effect on ephrin receptor A7 (EphA7) expression. Reversely, enhancement of EphA7 activity alleviated synaptic and behavioral alterations in these mice. This study highlights *Ash1l* as a risk gene for ASD through its direct effect on synaptic pruning. IB

<https://doi.org/10.1038/s41684-022-00937-w>

EXPERIMENTAL MODEL

Cardiovascular effects of SARS-CoV-2 in hamster

Rizvi, Z.A., Dalal, R. et al. *eLife* **11**, e73522. (2022)

Several animal models have been developed to study severe acute respiratory syndrome coronavirus-2 (SARS-CoV-2) infection and pathology. The Golden Syrian hamster is a valid preclinical model to study the disease, with evidence that the virus induces pulmonary pathologies similar to those seen in patients with COVID-19. However, extrapulmonary pathologies and post-COVID-19 implications have not been fully explored in this model yet.

A new study highlights that late stage SARS-CoV-2 infection in female Golden Syrian hamsters induces cardiovascular pathologies, including myocardial interstitial fibrosis, thickening of ventricular walls and the interventricular septum. The findings also show that SARS-CoV-2 infection leads to changes in the serum lipid and metabolite profiles of the animals, similar to some of the changes observed in patients with COVID-19. IB

<https://doi.org/10.1038/s41684-022-00939-8>

BEHAVIOR

A novel method for gait and posture analysis

Sheppard, K. et al. *Cell Rep.* **38**, 110231 (2022)

Gait and posture are indicators of physiological neuronal function and are impacted in different neurobiological pathologies. The ability to characterize gait and posture in different mouse models could help elucidate disease mechanisms and develop better models, but identifying limb position in freely moving animals remains challenging.

Sheppard and colleagues developed a deep-learning-based pose-estimation method to extract gait and posture metrics from top-down videos of mice in an open field, using 12 indicators of mouse anatomical location. They applied this method to detect gait and posture impairments in mouse models of neurodevelopmental disorders. The approach, which allows the processing of a large amount of data with low effort and cost, could be used to dissect the behavior of other mouse models of disease. IB

<https://doi.org/10.1038/s41684-022-00938-9>

EXPERIMENTAL MODEL

Zebrafish as a paradigm for metastasis research

Nakayama, J. et al. *eLife* **10**, e70151 (2021)

Metastasis is the primary cause of cancer-induced mortality. Available animal models of metastasis are usually expensive and time consuming for drug screening, especially rodents. In zebrafish, the first cell movement in gastrulation, called epiboly, resembles the process of cellular relocation in metastasis.

Nakayama et al. used epiboly in zebrafish as a marker to rapidly screen 1,280 chemicals. Among these, pizotifen, a serotonin receptor 2C (HTR2C) antagonist, interrupted this phenomenon. The researchers next demonstrated that pizotifen could suppress metastasis of human cancer cells in zebrafish and similar effects were observed in a mouse model of metastasis. This study opens new routes for the identification of pharmacological inhibitors of metastasis. IB

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