



**Cover:** Cranial vasculature in a zebrafish *col22a1<sup>-/-</sup>; kdrl:GFP; gata1:dsRed* embryo at 3 days post-fertilization. Red blood cells can be seen circulating within the blood vessels, which are labeled in green. Some red blood cells have leaked out of the vasculature, resulting in hemorrhages in *col22a1* mutant embryos. See article by Ton et al. (dmm033654). Cover image is licensed under a Creative Commons Attribution 4.0 International license.

## A MODEL FOR LIFE

Rocking the world of innate immunity: an interview with Luke O'Neill  
**O'Neill, L. A. J.**  
dmm037838

## FIRST PERSON

First person – Brian Belyea  
dmm038463

First person – Amy Findlay  
dmm038265

First person – Phillipe O'Brien  
dmm038323

First person – Bao-Luen Chang  
dmm038182

First person – Maria Replogle  
dmm038117

First person – Jennifer Hewitt  
dmm038091

First person – Matthew T. Pereira  
dmm037689

## REVIEWS

The roles of dystroglycan in the nervous system: insights from animal models of muscular dystrophy  
**Nickolls, A. R. and Bönnemann, C. G.**  
dmm035931

Hypoxia and connectivity in the developing vertebrate nervous system  
**Bonkowsky, J. L. and Son, J.-H.**  
dmm037127

## RESEARCH ARTICLES

A viable hypomorphic *Arnt2* mutation causes hyperphagic obesity, diabetes and hepatic steatosis  
**Turer, E. E., San Miguel, M., Wang, K.-w., McAlpine, W., Ou, F., Li, X., Tang, M., Zang, Z., Wang, J., Hayse, B., Evers, B., Zhan, X., Russell, J. and Beutler, B.**  
dmm035451

Dietary advanced glycation end-product consumption leads to mechanical stiffening of murine intervertebral discs  
**Krishnamoorthy, D., Hoy, R. C., Natelson, D. M., Torre, O. M., Laudier, D. M., Iatridis, J. C. and Iliien-Jünger, S.**  
dmm036012

Mouse *Idh3a* mutations cause retinal degeneration and reduced mitochondrial function  
**Findlay, A. S., Carter, R. N., Starbuck, B., McKie, L., Nováková, K., Budd, P. S., Keighren, M. A., Marsh, J. A., Cross, S. H., Simon, M. M., Potter, P. K., Morton, N. M. and Jackson, I. J.**  
dmm036426

Leukemia development initiated by deletion of *RBP-J*: mouse strain, deletion efficiency and cell of origin  
**Belyea, B. C., Xu, F., Sequeira-Lopez, M. L. S. and Gomez, R. A.**  
dmm036731

Semiology, clustering, periodicity and natural history of seizures in an experimental occipital cortical epilepsy model  
**Chang, B.-L., Leite, M., Snowball, A., Lieb, A., Chabrol, E., Walker, M. C., Kullmann, D. M., Schorge, S. and Wykes, R. C.**  
dmm036194

Collagen COL22A1 maintains vascular stability and mutations in *COL22A1* are potentially associated with intracranial aneurysms  
**Ton, Q. V., Leino, D., Mowery, S. A., Bredemeier, N. O., Lafontant, P. J., Lubert, A., Gurung, S., Farlow, J. L., Foroud, T. M., Broderick, J. and Sumanas, S.**  
dmm033654

Muscle strength deficiency and mitochondrial dysfunction in a muscular dystrophy model of *Caenorhabditis elegans* and its functional response to drugs  
**Hewitt, J. E., Pollard, A. K., Lesanzezhki, L., Deane, C. S., Gaffney, C. J., Etheridge, T., Szewczyk, N. J. and Vanapalli, S. A.**  
dmm036137

Macrophages enhance Vegfa-driven angiogenesis in an embryonic zebrafish tumour xenograft model  
**Britto, D. D., Wyroba, B., Chen, W., Lockwood, R. A., Tran, K. B., Shepherd, P. R., Hall, C. J., Crosier, K. E., Crosier, P. S. and Astin, J. W.**  
dmm035998

Effect of dietary additives on intestinal permeability in both *Drosophila* and a human cell co-culture  
**Pereira, M. T., Malik, M., Nostro, J. A., Mahler, G. J. and Musselman, L. P.**  
dmm034520

## RESOURCE ARTICLES

Juvenile murine models of prediabetes and type 2 diabetes develop neuropathy  
**O'Brien, P. D., Hinder, L. M., Rumora, A. E., Hayes, J. M., Dauch, J. R., Backus, C., Mendelson, F. E. and Feldman, E. L.**  
dmm037374

Identifying mouse developmental essential genes using machine learning  
**Tian, D., Wenlock, S., Kabir, M., Tzotzos, G., Doig, A. J. and Hentges, K. E.**  
dmm034546

Establishment of a murine culture system for modeling the temporal progression of cranial and trunk neural crest cell differentiation

**Replogle, M. R., Sreevidya, V. S., Lee, V. M., Laiosa, M. D., Svoboda, K. R. and Udvardia, A. J.**

dmm035097

CRISPR-Cas9 human gene replacement and phenomic characterization in *Caenorhabditis elegans* to understand the functional conservation of human genes and decipher variants of uncertain significance

**McDiarmid, T. A., Au, V., Loewen, A. D., Liang, J., Mizumoto, K., Moerman, D. G. and Rankin, C. H.**

dmm036517