



Cover: Cranial vasculature in a zebrafish *col22a1^{-/-}; 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

Replegle, 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