



**Cover:** Immunostained nerves of the pharyngeal region of a mouse embryo at embryonic day 11.5. Motor nerves, including the hypoglossal nerve and cervical nerve 1 (C1) – which serve the tongue and pharyngeal musculature – emanate from the ventral neural tube (image center). Routing of these motor nerves is disrupted when vitamin A metabolism is deficient. Mis-routing of the pharyngeal motor nerves impairs movement of the fetal mouth *in utero*, contributing to formation of cleft palate. See article by Friedl et al. (dmm039073). Cover image is licensed under a Creative Commons Attribution 4.0 International license.

## FIRST PERSON

First person – Marie Rodinova  
dmm041285

First person – Christiaan Veerman  
dmm041202

## AT A GLANCE

Disease modelling in human organoids  
**Lancaster, M. A. and Huch, M.**  
dmm039347

## REVIEW

Photoacoustic imaging as a tool to probe the tumour microenvironment  
**Brown, E., Brunker, J. and Bohndiek, S. E.**  
dmm039636

## RESEARCH ARTICLES

Deterioration of mitochondrial bioenergetics and ultrastructure impairment in skeletal muscle of a transgenic minipig model in the early stages of Huntington's disease  
**Rodinova, M., Krizova, J., Stufkova, H., Bohuslavova, B., Askeland, G., Dosoudilova, Z., Juhas, S., Juhasova, J., Ellederova, Z., Zeman, J., Eide, L., Motlik, J. and Hansikova, H.**  
dmm038737

Modelling the MYC-driven normal-to-tumour switch in breast cancer  
**Lourenco, C., Kalkat, M., Houlahan, K. E., De Melo, J., Longo, J., Done, S. J., Boutros, P. C. and Penn, L. Z.**  
dmm038083

Active receptor tyrosine kinases, but not Brachyury, are sufficient to trigger chordoma in zebrafish  
**D'Agati, G., Cabello, E. M., Frontzek, K., Rushing, E. J., Klemm, R., Robinson, M. D., White, R. M., Mosimann, C. and Burger, A.**  
dmm039545

Insulin receptor substrate 2 (IRS2) deficiency delays liver fibrosis associated with cholestatic injury  
**Villar-Lorenzo, A., Rada, P., Rey, E., Marañón, P., Arroba, A. I., Santamaría, B., Sáiz, J., Rupérez, F. J., Barbas, C., García-Monzón, C., Valverde, Á. M. and González-Rodríguez, Á.**  
dmm038810

Morphological and functional correlates of vestibular synaptic deafferentation and repair in a mouse model of acute-onset vertigo  
**Cassel, R., Bordiga, P., Carcaud, J., Simon, F., Beraneck, M., Le Gall, A., Benoit, A., Bouet, V., Philoxene, B., Besnard, S., Watabe, I., Pericat, D., Hautefort, C., Assie, A., Tonetto, A., Dyhrfeld-Johnsen, J., Llorens, J., Tighilet, B. and Chabbert, C.**  
dmm039115

Conserved properties of genetic architecture of renal and fat transcriptomes in rat models of insulin resistance  
**Otto, G. W., Kaisaki, P. J., Brial, F., Le Lay, A., Cazier, J.-B., Mott, R. and Gauguier, D.**  
dmm038539

Development of mouse models of angiosarcoma driven by p53  
**Salter, D. M., Griffin, M., Muir, M., Teo, K., Culley, J., Smith, J. R., Gomez-Cuadrado, L., Matchett, K., Sims, A. H., Hayward, L., Henderson, N. C. and Brunton, V. G.**  
dmm038612

Genetic variation in *GNB5* causes bradycardia by augmenting the cholinergic response via increased acetylcholine-activated potassium current ( $I_{K,ACh}$ )  
**Veerman, C. C., Mengarelli, I., Koopman, C. D., Wilders, R., van Amersfoort, S. C., Bakker, D., Wolswinkel, R., Hababa, M., de Boer, T. P., Guan, K., Milnes, J., Lodder, E. M., Bakkers, J., Verkerk, A. O. and Bezzina, C. R.**  
dmm037994

The MMTV-Wnt1 murine model produces two phenotypically distinct subtypes of mammary tumors with unique therapeutic responses to an EGFR inhibitor  
**Pfefferle, A. D., Darr, D. B., Calhoun, B. C., Mott, K. R., Rosen, J. M. and Perou, C. M.**  
dmm037192

RDH10 function is necessary for spontaneous fetal mouth movement that facilitates palate shelf elevation  
**Friedl, R. M., Raja, S., Metzler, M. A., Patel, N. D., Brittan, K. R., Jones, S. P. and Sandell, L. L.**  
dmm039073

## RESOURCE ARTICLES

Genome-wide analysis of androgen receptor binding and transcriptomic analysis in mesenchymal subsets during prostate development  
**Nash, C., Boufaied, N., Badescu, D., Wang, Y. C., Paliouras, M., Trifiro, M., Ragoussis, I. and Thomson, A. A.**  
dmm039297

Standardised imaging pipeline for phenotyping mouse laterality defects and associated heart malformations, at multiple scales and multiple stages  
**Desgrange, A., Lokmer, J., Marchiol, C., Houyel, L. and Meilhac, S. M.**  
dmm038356