



Cover: Omerzu et al. visualize individual RNA molecules in human colon mini-organ (organoid) with single molecule fluorescence *in situ* hybridization (smFISH). Organoid was stained with *LGR5* smFISH probes (cyan), the colour of the nuclei reflects differences in Hoechst staining intensity. Image licensed under a Creative Commons Attribution 4.0 International license.

RESEARCH ARTICLES

Multi-modal and multiscale imaging approaches reveal novel cardiovascular pathophysiology in *Drosophila melanogaster*

Weismann, C. G., Blice-Baum, A., Tong, T., Li, J., Huang, B. K., Jonas, S. M., Cammarato, A. and Choma, M. A.
bio044339

Accuracy of fruit-fly eclosion rhythms evolves by strengthening circadian gating rather than developmental fine-tuning

Varma, V., Krishna, S., Srivastava, M., Sharma, V. K. and Sheeba, V.
bio042176

Unique trophoblast chromatin environment mediated by the PcG protein SFMBT2

Tang, P., Miri, K. and Varmuza, S.
bio043638

A *Plasmodium berghei* putative serine-threonine kinase 2 (*PBANKA_0311400*) is required for late liver stage development and timely initiation of blood stage infection

Jillapalli, R., Narwal, S. K., Kolli, S. K., Mastan, B. S., Segireddy, R. R., Dey, S., Srivastava, P. N., Mishra, S. and Kumar, K. A.
bio042028

EGFP insertional mutagenesis reveals multiple FXR2P fibrillar states with differing ribosome association in neurons

Stackpole, E. E., Akins, M. R., Ivshina, M., Murthy, A. C., Fawzi, N. L. and Fallon, J. R.
bio046383

Role of Dach1 revealed using a novel inner ear-specific Dach1-knockdown mouse model

Miwa, T., Minoda, R., Ishikawa, Y., Kajii, T., Orita, Y. and Ohyama, T.
bio043612

Mechanical stress-induced cell death in breast cancer cells

Takao, S., Taya, M. and Chiew, C.
bio043133

Exposure to a 50 Hz magnetic field at 100 μ T exerts no DNA damage in cardiomyocytes

Wang, Y., Liu, X., Zhang, Y., Wan, B., Zhang, J., He, W., Hu, D., Yang, Y., Lai, J., He, M. and Chen, C.
bio041293

Inhalation of marijuana affects *Drosophila* heart function

Gómez, I. M., Rodríguez, M. A., Santalla, M., Kassis, G., Colman Lerner, J. E., Aranda, J. O., Sedán, D., Andrinolo, D., Valverde, C. A. and Ferrero, P.
bio044081

The ventral epithelium of *Trichoplax adhaerens* deploys in distinct patterns cells that secrete digestive enzymes, mucus or diverse neuropeptides

Mayorova, T. D., Hammar, K., Winters, C. A., Reese, T. S. and Smith, C. L.
bio045674

Independent evolution for sex determination and differentiation in the *DMRT* family in animals

Mawaribuchi, S., Ito, Y. and Ito, M.
bio041962

HDAC3 and HDAC8 are required for cilia assembly and elongation

Park, S.-a., Yoo, H., Seol, J. H. and Rhee, K.
bio043828

YFR016c/Aip5 is part of an actin nucleation complex in yeast

Glomb, O., Bareis, L. and Johnsson, N.
bio044024

Discoidin domain receptor 1 deficiency in vascular smooth muscle cells leads to mislocalisation of N-cadherin contacts

Xu, S., Bala, S. and Bendeck, M. P.
bio041913

The *Col4a2^{em1(IMPC)Wtsi}* mouse line: lessons from the Deciphering the Mechanisms of Developmental Disorders program

Reissig, L. F., Herdina, A. N., Rose, J., Maurer-Gesek, B., Lane, J. L., Prin, F., Wilson, R., Hardman, E., Galli, A., Tudor, C., Tuck, E., Icoresi-Mazzeo, C., White, J. K., Ryder, E., Gleeson, D., Adams, D. J., Geyer, S. H., Mohun, T. J. and Weninger, W. J.
bio042895

MicroRNA-138 negatively regulates the hypoxia-inducible factor 1 α to suppress melanoma growth and metastasis

Qiu, H., Chen, F. and Chen, M.
bio042937

Reduced mTORC1-signalling in retinal progenitor cells leads to visual pathway dysfunction

Jones, I., Hägglund, A.-C. and Carlsson, L.
bio044370

Comparing 3D ultrastructure of presynaptic and postsynaptic mitochondria

Delgado, T., Petralia, R. S., Freeman, D. W., Sedlacek, M., Wang, Y.-X., Brenowitz, S. D., Sheu, S.-H., Gu, J. W., Kapogiannis, D., Mattson, M. P. and Yao, P. J.
bio044834

METHODS AND TECHNIQUES

Three-dimensional analysis of single molecule FISH in human colon organoids

Omerzu, M., Fenderico, N., de Barbanson, B., Sprangers, J., de Ridder, J. and Maurice, M. M.
bio042812

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First person – Vishwanath Varma
bio047027

First person – Toru Miwa
bio046821

First person – Ivana María Gómez and Maia Abigail Rodríguez
bio046409

First person – Yong Wang
bio046714