



Cover: Dorsal view of the nervous system of a *Xenopus tropicalis* tadpole following β -tubulin antibody staining and confocal microscopy. *X. tropicalis* is a valuable model for understanding the function of human neurodevelopmental risk disorder genes due to its conserved diploid genome, the ability to make unilateral mutants, and the wealth of experimental tools and knowledge. See Research report by Willsey et al. (dev189290).

SPECIAL ISSUE: The Origins and Mechanisms of Developmental Disorders

Guest editors: Sally Dunwoodie and John Wallingford

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Diseases of development: leveraging developmental biology to understand human disease

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Challenges and opportunities at the interface of birth defects, human genetics and developmental biology

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Using *Drosophila* to drive the diagnosis and understand the mechanisms of rare human diseases

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Embracing human genetics: a primer for developmental biologists

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Disruption of the nectin-afadin complex recapitulates features of the human cleft lip/palate syndrome CLPED1

Lough, K. J., Spitzer, D. C., Bergman, A. J., Wu, J. J.,

Byrd, K. M. and Williams, S. E.

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Mitf-family transcription factor function is required within cranial neural crest cells to promote choroid fissure closure

Sinagoga, K. L., Larimer-Picciani, A. M., George, S. M.,

Spencer, S. A., Lister, J. A. and Gross, J. M.

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The neurodevelopmental disorder risk gene *DYRK1A* is required for ciliogenesis and control of brain size in *Xenopus* embryos

Willsey, H. R., Xu, Y., Everitt, A., Dea, J., Exner, C. R. T.,

Willsey, A. J., State, M. W. and Harland, R. M.

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RESEARCH ARTICLES

Control of skeletal morphogenesis by the Hippo-YAP/TAZ pathway

Vanyai, H. K., Prin, F., Guillermin, O., Marzook, B., Boeing, S.,

Narayanan, G., Junnarkar, S., Wearne, S., Strutt, J.,

Mohun, T. J. and Thompson, B.

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Mitchell-Riley syndrome iPSCs exhibit reduced pancreatic endoderm differentiation due to a mutation in *RFX6*

Trott, J., Alpagu, Y., Tan, E. K., Shboul, M., Dawood, Y.,

Elsy, M., Wollmann, H., Tano, V., Bonnard, C., Eng, S.,

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Hagoort, J., Eskin, A., Lee, H., Nelson, S. F., Al-Kazaleh, F.,

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Reversade, B. and Dunn, N. R.

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RET overactivation leads to concurrent Hirschsprung disease and intestinal ganglioneuromas

Nagy, N., Guyer, R. A., Hotta, R., Zhang, D., Newgreen, D. F.,

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Downregulation of the GHRH/GH/IGF1 axis in a mouse model of Börjeson-Forssman-Lehman syndrome

McRae, H. M., Eccles, S., Whitehead, L., Alexander, W. S.,

Géczy, J., Thomas, T. and Voss, A. K.

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The Fgf8 subfamily (Fgf8, Fgf17 and Fgf18) is required for closure of the embryonic ventral body wall

Boylan, M., Anderson, M. J., Ornitz, D. M.

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Deficiency and overexpression of *Rtl1* in the mouse cause distinct muscle abnormalities related to Temple and Kagami-Ogata syndromes

Kitazawa, M., Hayashi, S., Imamura, M., Takeda, S., Oishi, Y.,

Kaneko-Ishino, T. and Ishino, F.

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Temporal-specific roles of fragile X mental retardation protein in the development of the hindbrain auditory circuit

Wang, X., Kohl, A., Yu, X., Zorio, D. A. R., Klar, A., Sela-Donenfeld, D. and Wang, Y.

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Loss of U11 small nuclear RNA in the developing mouse limb results in micromelia

Drake, K. D., Lemoine, C., Aquino, G. S., Vaeth, A. M. and Kanadia, R. N.

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NPC1 deficiency impairs cerebellar postnatal development of microglia and climbing fiber refinement in a mouse model of Niemann–Pick disease type C

Boyle, B. R., Melli, S. E., Altreche, R. S., Padron, Z. M., Yousufzai, F. A. K., Kim, S., Vasquez, M. D., Carone, D. M., Carone, B. R. and Soto, I.

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Stromal β -catenin activation impacts nephron progenitor differentiation in the developing kidney and may contribute to Wilms tumor

Drake, K. A., Chaney, C. P., Das, A., Roy, P., Kwartler, C. S., Rakheja, D. and Carroll, T. J.

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The KMT2D Kabuki syndrome histone methylase controls neural crest cell differentiation and facial morphology

Shpargel, K. B., Mangini, C. L., Xie, G., Ge, K. and Magnuson, T.

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Msx1 deficiency interacts with hypoxia and induces a morphogenetic regulation during mouse lip development

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A mutation affecting laminin alpha 5 polymerisation gives rise to a syndromic developmental disorder

Jones, L. K., Lam, R., McKee, K. K., Aleksandrova, M., Dowling, J., Alexander, S. I., Mallawaarachchi, A., Cottle, D. L., Short, K. M., Pais, L., Miner, J. H., Mallett, A. J., Simons, C., McCarthy, H., Yurchenco, P. D. and Smyth, I. M.

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The FOXJ1 target *Cfap206* is required for sperm motility, mucociliary clearance of the airways and brain development

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RNF220 is required for cerebellum development and regulates medulloblastoma progression through epigenetic modulation of Shh signaling

Ma, P., An, T., Zhu, L., Zhang, L., Wang, H., Ren, B., Sun, B., Zhou, X., Li, Y. and Mao, B.

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Cleft lip and cleft palate in *Esrp1* knockout mice is associated with alterations in epithelial-mesenchymal crosstalk

Lee, S. K., Sears, M. J., Zhang, Z., Li, H., Salhab, I., Krebs, P., Xing, Y., Nah, H.-D., Williams, T. and Carstens, R. P.

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Lymphatics in bone arise from pre-existing lymphatics

Monroy, M., McCarter, A. L., Hominick, D., Cassidy, N. and Dellinger, M. T.

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