



**Cover:** Confocal image of E14.5 mouse pancreas showing the pancreatic epithelium, highlighted by PDX1 (red), and the bipotent progenitors expressing bicaudal C1 (green). In the pancreas, bicaudal C1 is important for ductal morphogenesis and for endocrine progenitor production. See Research article by Lemaire et al. on p. 858.

### MEETING REVIEW

- 811 Neural development and regeneration: it's all in your spinal cord  
**Becker, C. G. and Diez del Corral, R.**

### REVIEW

- 817 A pathway to bone: signaling molecules and transcription factors involved in chondrocyte development and maturation  
**Kozhemyakina, E., Lassar, A. B. and Zelzer, E.**

### STEM CELLS AND REGENERATION

- 832 Asymmetric inheritance of the apical domain and self-renewal of retinal ganglion cell progenitors depend on Anillin function  
**Paolini, A., Duchemin, A.-L., Albadri, S., Patzel, E., Bornhorst, D., González Avalos, P., Lemke, S., Machate, A., Brand, M., Sel, S., Di Donato, V., Del Bene, F., Zolessi, F. R., Ramialison, M. and Poggi, L.**

- 840 Striatal astrocytes produce neuroblasts in an excitotoxic model of Huntington's disease  
**Nato, G., Caramello, A., Trova, S., Avataneo, V., Rolando, C., Taylor, V., Buffo, A., Peretto, P. and Luzzati, F.**

- 846 Identification of cardiovascular lineage descendants at single-cell resolution  
**Li, G., Plonowska, K., Kuppusamy, R., Sturzu, A. and Wu, S. M.**

- 858 Bicaudal C1 promotes pancreatic NEUROG3<sup>+</sup> endocrine progenitor differentiation and ductal morphogenesis  
**Lemaire, L. A., Goulley, J., Kim, Y. H., Carat, S., Jacquemin, P., Rougemont, J., Constam, D. B. and Grapin-Botton, A.**

- 871 Hnf1b controls pancreas morphogenesis and the generation of Ngn3<sup>+</sup> endocrine progenitors  
**De Vas, M. G., Kopp, J. L., Heliot, C., Sander, M., Cereghini, S. and Haumaitre, C.**

- 883 Activin signaling balances proliferation and differentiation of ovarian niche precursors and enables adjustment of niche numbers  
**Lengil, T., Gancz, D. and Gilboa, L.**

- 893 The WNT-controlled transcriptional regulator LBH is required for mammary stem cell expansion and maintenance of the basal lineage  
**Lindley, L. E., Curtis, K. M., Sanchez-Mejias, A., Rieger, M. E., Robbins, D. J. and Briegel, K. J.**

### RESEARCH REPORT

- 905 Auxin-induced degradation dynamics set the pace for lateral root development  
**Guseman, J. M., Hellmuth, A., Lanctot, A., Feldman, T. P., Moss, B. L., Klavins, E., Calderón Villalobos, L. I. A. and Nemhauser, J. L.**

### RESEARCH ARTICLES

- 910 Gene activation-associated long noncoding RNAs function in mouse preimplantation development  
**Hamazaki, N., Uesaka, M., Nakashima, K., Agata, K. and Imamura, T.**
- 921 A MEIG1/PACRG complex in the manchette is essential for building the sperm flagella  
**Li, W., Tang, W., Teves, M. E., Zhang, Z., Zhang, L., Li, H., Archer, K. J., Peterson, D. L., Williams, D. C., Jr, Strauss, J. F., III and Zhang, Z.**
- 931 Contributions of Costal 2-Fused interactions to Hedgehog signaling in *Drosophila*  
**Zadorozny, E. V., Little, J. C. and Kalderon, D.**
- 943 Late Alk4/5/7 signaling is required for anterior skeletal patterning in sea urchin embryos  
**Piacentino, M. L., Ramachandran, J. and Bradham, C. A.**
- 953 Geometric control of ciliated band regulatory states in the sea urchin embryo  
**Barsi, J. C., Li, E. and Davidson, E. H.**
- 962 The cytoplasmic domain of the gamete membrane fusion protein HAP2 targets the protein to the fusion site in *Chlamydomonas* and regulates the fusion reaction  
**Liu, Y., Pei, J., Grishin, N. and Snell, W. J.**
- 972 Wnt ligands from the embryonic surface ectoderm regulate 'bimetallic strip' optic cup morphogenesis in mouse  
**Carpenter, A. C., Smith, A. N., Wagner, H., Cohen-Tayar, Y., Rao, S., Wallace, V., Ashery-Padan, R. and Lang, R. A.**
- 983 Muscle composition is regulated by a Lox-TGF $\beta$  feedback loop  
**Kutchuk, L., Laitala, A., Soueid-Bomgarten, S., Shentzer, P., Rosendahl, A.-H., Eilott, S., Grossman, M., Sagi, I., Sormunen, R., Myllyharju, J., Mäki, J. M. and Hasson, P.**
- 994 *Drosophila* small heat shock protein CryAB ensures structural integrity of developing muscles, and proper muscle and heart performance  
**Wójtowicz, I., Jabłońska, J., Zmojdian, M., Taghli-Lamalle, O., Renaud, Y., Junion, G., Daczewska, M., Huelsmann, S., Jagla, K. and Jagla, T.**

- 1006** Extramacrochaetae functions in dorsal-ventral patterning of *Drosophila* imaginal discs  
**Spratford, C. M. and Kumar, J. P.**

#### TECHNIQUES AND RESOURCES

- 1016** Optical tomography complements light sheet microscopy for *in toto* imaging of zebrafish development  
**Bassi, A., Schmid, B. and Huisken, J.**

#### CORRECTIONS

- 1021** The NAV2 homolog Sickie regulates F-actin-mediated axonal growth in *Drosophila* mushroom body neurons via the non-canonical Rac-Cofilin pathway  
**Abe, T., Yamazaki, D., Murakami, S., Hiroi, M., Nitta, Y., Maeyama, Y. and Tabata, T.**
- 1022** *Arabidopsis AIP1-2* restricted by *WER*-mediated patterning modulates planar polarity  
**Kiefer, C. S., Claes, A. R., Nzayisenga, J.-C., Pietra, S., Stanislas, T., Hüser, A., Ikeda, Y. and Grebe, M.**