



**Cover:** Stylized confocal images showing expression domains of *WOX:GFP* (left), *FEZ:FEZ-GFP* (centre) and *SMB:SMB-GFP* (right) in the *Arabidopsis* columella root cap. Roots were counterstained with propidium iodide (red) to indicate the position of cell walls; images were stylized by application of a 'glowing edges' filter. See Research article by Bennett et al. on p. 4055.

## REVIEWS

**4031** Development of the cerebellum: simple steps to make a 'little brain'  
**Butts, T., Green, M. J. and Wingate, R. J. T.**

**4042** Making designer mutants in model organisms  
**Peng, Y., Clark, K. J., Campbell, J. M., Panetta, M. R., Guo, Y. and Ekker, S. C.**

## STEM CELLS AND REGENERATION

**4055** Precise control of plant stem cell activity through parallel regulatory inputs  
**Bennett, T., van den Toorn, A., Willemsen, V. and Scheres, B.**

**4065** Quiescent neuronal progenitors are activated in the juvenile guinea pig lateral striatum and give rise to transient neurons  
**Luzzati, F., Nato, G., Oboti, L., Vigna, E., Rolando, C., Armentano, M., Bonfanti, L., Fasolo, A. and Peretto, P.**

**4076** mTOR regulates brain morphogenesis by mediating GSK3 signaling  
**Ka, M., Condorelli, G., Woodgett, J. R. and Kim, W.-Y.**

**4087** *Hmga2* regulates self-renewal of retinal progenitors  
**Parameswaran, S., Xia, X., Hegde, G. and Ahmad, I.**

## RESEARCH REPORTS

**4098** The ubiquitin ligase FbxL7 regulates the Dachous-Fat-Dachs system in *Drosophila*  
**Rodriguez-Campos, M. and Thompson, B. J.**

**4104** A fat body-derived apical extracellular matrix enzyme is transported to the tracheal lumen and is required for tube morphogenesis in *Drosophila*  
**Dong, B., Miao, G. and Hayashi, S.**

**4110** TGF- $\alpha$  ligands can substitute for the neuregulin *Vein* in *Drosophila* development  
**Austin, C. L., Manivannan, S. N. and Simcox, A.**

**4115** Tissue-specific genome editing in *Ciona* embryos by CRISPR/Cas9  
**Stolfi, A., Gandhi, S., Salek, F. and Christiaen, L.**

**4121** Multiple endothelial cells constitute the tip of developing blood vessels and polarize to promote lumen formation  
**Pelton, J. C., Wright, C. E., Leitges, M. and Bautch, V. L.**

## RESEARCH ARTICLES

**4127** A conserved role for non-neural ectoderm cells in early neural development  
**Cajal, M., Creuzet, S. E., Papanayotou, C., Sabéran-Djoneidi, D., Chuva de Sousa Lopes, S. M., Zwijsen, A., Collignon, J. and Camus, A.**

**4139** The C2-domain protein QUIRKY and the receptor-like kinase STRUBBELIG localize to plasmodesmata and mediate tissue morphogenesis in *Arabidopsis thaliana*  
**Vaddepalli, P., Herrmann, A., Fulton, L., Oelschner, M., Hillmer, S., Stratil, T. F., Fastner, A., Hammes, U. Z., Ott, T., Robinson, D. G. and Schneitz, K.**

**4149** Reciprocal myocardial-endocardial interactions pattern the delay in atrioventricular junction conduction  
**Bressan, M., Yang, P. B., Louie, J. D., Navetta, A. M., Garriock, R. J. and Mikawa, T.**

**4158** Spatial gradients of protein-level time delays set the pace of the traveling segmentation clock waves  
**Ay, A., Holland, J., Sperlea, A., Devakanmalai, G. S., Knierer, S., Sangervasi, S., Stevenson, A. and Özbudak, E. M.**

**4168** *Arid3b* is essential for second heart field cell deployment and heart patterning  
**Uribe, V., Badía-Careaga, C., Casanova, J. C., Domínguez, J. N., de la Pompa, J. L. and Sanz-Ezquerro, J. J.**

**4182** The tumor suppressor Nf2 regulates corpus callosum development by inhibiting the transcriptional coactivator Yap  
**Lavado, A., Ware, M., Paré, J. and Cao, X.**

## TECHNIQUES AND RESOURCES

**4194** Genome-wide identification of signaling center enhancers in the developing limb  
**VanderMeer, J. E., Smith, R. P., Jones, S. L. and Ahituv, N.**