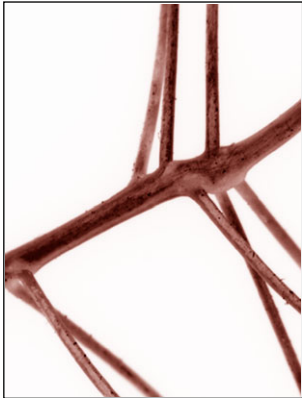
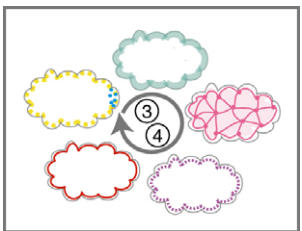


# Development



**Cover:** Elimination of the function of all three *MIR164* miRNA genes of *Arabidopsis thaliana* leads to an abnormal arrangement of flowers along the stem, as shown on this false-color photograph, and to variation in the number of floral organs in flowers, revealing functional redundancy among *miR164* miRNAs and their role as developmental buffers. See research article by Sieber et al. on p. 1051.



During the polarization of the *C. elegans* embryo, the symmetry-breaking event is an asymmetric rearrangement of the actomyosin network. In this issue, Cowan and Hyman review recent insights into how the actomyosin network is regulated during *C. elegans* polarization, how its reorganization leads to asymmetric PAR protein distribution and the roles of two GTPases, RHO-1 and CDC-42, in these processes. See review article on p. 1035.

## PRIMER

- 1023** Nodal signaling: developmental roles and regulation  
Shen, M. M.

## REVIEW

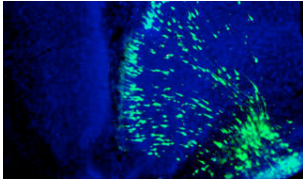
- 1035** Acto-myosin reorganization and PAR polarity in *C. elegans*  
Cowan, C. R. and Hyman, A. A.

## RESEARCH REPORT

- 1045** Plants expressing a *miR164*-resistant *CUC2* gene reveal the importance of post-meristematic maintenance of phyllotaxy in *Arabidopsis*  
Peaucelle, A., Morin, H., Traas, J. and Laufs, P.

## RESEARCH ARTICLES

- 1051** Redundancy and specialization among plant microRNAs: role of the *MIR164* family in developmental robustness  
Sieber, P., Wellmer, F., Gheyselinck, J., Riechmann, J. L. and Meyerowitz, E. M.
- 1061** The Snail repressor is required for PMC ingression in the sea urchin embryo  
Wu, S.-Y. and McClay, D. R.
- 1071** Notch signaling controls germline stem cell niche formation in the *Drosophila* ovary  
Song, X., Call, G. B., Kirilly, D. and Xie, T.
- 1081** Deconstructing evolution of adult phenotypes: genetic analyses of *kit* reveal homology and evolutionary novelty during adult pigment pattern development of *Danio* fishes  
Mills, M. G., Nuckels R. J. and Parichy D. M.
- 1091** Polycomb group genes are required for neural stem cell survival in postembryonic neurogenesis of *Drosophila*  
Bello, B., Holbro, N. and Reichert, H.
- 1101** R1R2R3-Myb proteins positively regulate cytokinesis through activation of *KNOLLE* transcription in *Arabidopsis thaliana*  
Haga, N., Kato, K., Murase, M., Araki, S., Kubo, M., Demura, T., Suzuki, K., Müller, I., Voß, U., Jürgens, G. and Ito, M.
- 1111** Notch signaling controls the differentiation of transporting epithelia and multiciliated cells in the zebrafish pronephros  
Liu, Y., Pathak, N., Kramer-Zucker, A. and Drummond, I. A.
- 1123** Mbd3, a component of the NuRD co-repressor complex, is required for development of pluripotent cells  
Kaji, K., Nichols, J. and Hendrich, B.
- 1133** Hippocampus-like corticoneurogenesis induced by two isoforms of the BTB-zinc finger gene *Zbtb20* in mice  
Nielsen, J. V., Nielsen, F. H., Ismail, R., Noraberg, J. and Jensen, N. A.
- 1141** Transcriptional regulation of epidermal cell fate in the *Arabidopsis* embryo  
Takada, S. and Jürgens, G.
- 1151** *Ptf1a* is essential for the differentiation of GABAergic and glycinergic amacrine cells and horizontal cells in the mouse retina  
Nakhai, H., Sel, S., Favor, J., Mendoza-Torres, L., Paulsen, F., Duncker, G. I. W. and Schmid, R. M.



In wild-type mice, newborn neurons (green) migrate out of the intermediate zone of the cerebral cortex. In *Zbtb20* transgenic mice, neuronal migration is delayed resulting in neocortical malformations and behavioural abnormalities. *Zbtb20* is proposed to act as a molecular switch that suppresses cell fate transitions and induces neuronal morphogenesis. **See research article on p. 1133.**

- 1161** *Drosophila* follicle cells are patterned by multiple levels of Notch signaling and antagonism between the Notch and JAK/STAT pathways  
**Assa-Kunik, E., Torres, I. L., Schejter, E. D., St Johnston, D. and Shilo, B.-Z.**
- 1171** A homeo-paired domain-binding motif directs Myf5 expression in progenitor cells of limb muscle  
**Buchberger, A., Freitag, D. and Arnold, H.-H.**
- 1181** PSA-NCAM in postnatally generated immature neurons of the olfactory bulb: a crucial role in regulating p75 expression and cell survival  
**Gascon, E., Vutskits, L., Jenny, B., Durbec, P. and Kiss, J. Z.**
- 1191** Head regeneration in wild-type hydra requires de novo neurogenesis  
**Miljkovic-Licina, M., Chera, S., Ghila, L. and Galliot, B.**
- 1203** ERK- and JNK-signalling regulate gene networks that stimulate metamorphosis and apoptosis in tail tissues of ascidian tadpoles  
**Chambon, J.-P., Nakayama, A., Takamura, K., McDougall, A. and Satoh, N.**
- 1221** BMP4 and PTHrP interact to stimulate ductal outgrowth during embryonic mammary development and to inhibit hair follicle induction  
**Hens, J. R., Dann, P., Zhang, J.-P., Harris, S., Robinson, G. W. and Wysolmerski, J.**

#### DEVELOPMENT AND DISEASE

- 1231** Constitutive activation of smoothened (SMO) in mammary glands of transgenic mice leads to increased proliferation, altered differentiation and ductal dysplasia.  
**Moraes, R. C., Zhang, X., Harrington, N., Fung, J. Y., Wu, M.-F., Hilsenbeck, S. G., Allred, D. C. and Lewis, M. T.**