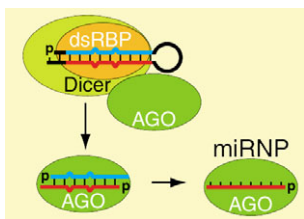


Development



Cover: Regenerated *Smed-βcatenin1* RNAi-silenced planarians showing the most extreme phenotype: radial-like hypercephalized animals, with eyes all around the new circular edge. These planarians lose the classical bilateral directional movement and acquire a medusa-like shape. See research report by Iglesias et al. on p. 1215.



Several distinct classes of small RNAs, some newly identified, have been discovered to play important roles in various and diverse cellular processes. In this issue, Thomas Tuschl and colleagues review the classes of small RNAs known to date, their cellular functions and protein partners, and their association with specific Ago/Piwi family members. See review on p. 1201.

REVIEW

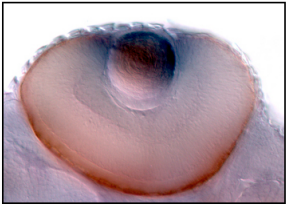
- 1201** The growing catalog of small RNAs and their association with distinct Argonaute/Piwi family members
Farazi, T. A., Juranek, S. A. and Tuschl, T.

RESEARCH REPORT

- 1215** Silencing of *Smed-βcatenin1* generates radial-like hypercephalized planarians
Iglesias, M., Gomez-Skarmeta, J. L., Saló, E. and Adell, T.

RESEARCH ARTICLES

- 1223** Mesenchyme-dependent BMP signaling directs the timing of mandibular osteogenesis
Merrill, A. E., Eames, B. F., Weston, S. J., Heath, T. and Schneider, R. A.
- 1235** An *Arabidopsis* F-box protein acts as a transcriptional co-factor to regulate floral development
Chae, E., Tan, Q. K.-G., Hill, T. A. and Irish, V. F.
- 1247** Mutation of DNA primase causes extensive apoptosis of retinal neurons through the activation of DNA damage checkpoint and tumor suppressor p53
Yamaguchi, M., Fujimori-Tonou, N., Yoshimura, Y., Kishi, T., Okamoto, H. and Masai, I.
- 1259** CDC-25.1 stability is regulated by distinct domains to restrict cell division during embryogenesis in *C. elegans*
Hebeisen, M. and Roy, R.
- 1271** *Ascl1* is required for oligodendrocyte development in the spinal cord
Sugimori, M., Nagao, M., Parras, C. M., Nakatani, H., Lebel, M., Guillemot, F. and Nakafuku, M.
- 1283** *Lrig3* regulates neural crest formation in *Xenopus* by modulating Fgf and Wnt signaling pathways
Zhao, H., Tanegashima, K., Ro, H. and Dawid, I. B.
- 1295** *xDnmt1* regulates transcriptional silencing in pre-MBT *Xenopus* embryos independently of its catalytic function
Duncan, D. S., Ruzov, A., Hackett, J. A. and Meehan, R. R.
- 1303** PLK-1 asymmetry contributes to asynchronous cell division of *C. elegans* embryos
Budirahardja, Y. and Gönczy, P.
- 1315** Three *PIGGYBACK* genes that specifically influence leaf patterning encode ribosomal proteins
Pinon, V., EtcHELLS, J. P., ROSSIGNOL, P., COLLIER, S. A., ARROYO, J. M., MARTIENSSEN, R. A. and BYRNE, M. E.
- 1325** Ribosomal proteins promote leaf adaxial identity
Yao, Y., Ling, Q., Wang, H. and Huang, H.
- 1335** *Arabidopsis* *CAPRICE-LIKE MYB 3 (CPL3)* controls endoreduplication and flowering development in addition to trichome and root hair formation
Tominaga, R., Iwata, M., Sano, R., Inoue, K., Okada, K. and Wada, T.
- 1347** Evidence that DIF-1 and hyper-osmotic stress activate a *Dictyostelium* STAT by inhibiting a specific protein tyrosine phosphatase
Araki, T., Langenick, J., Gamper, M., Firtel, R. A. and Williams, J. G.
- 1355** Dual function of Src in the maintenance of adherens junctions during tracheal epithelial morphogenesis
Shindo, M., Wada, H., Kaido, M., Tateno, M., Aigaki, T., Tsuda, L. and Hayashi, S.



Retina of a 48 hpf zebrafish embryo, showing that zebrafish *chk2* expression is similar to that of *prim1* (which encodes the DNA primase small subunit). In this study, Yamaguchi et al. report that neuronal apoptosis caused by a *prim1* mutation depends on the ATM-Chk2-p53 apoptotic pathway. See research article on p. 1247.

DEVELOPMENT AND DISEASE

- 1365** Chick pulmonary *Wnt5a* directs airway and vascular tubulogenesis
Loscertales, M., Mikels, A. J., Hu, J. K.-H., Donahoe, P. K. and Roberts, D. J.
- 1377** Regulation of *Dlx5* and *Dlx6* gene expression by p63 is involved in EEC and SHFM congenital limb defects
Lo Iacono, N., Mantero, S., Chiarelli, A., Garcia, E., Mills, A. A., Morasso, M. I., Costanzo, A., Levi, G., Guerrini, L. and Merlo, G. R.