Cover: *Drosophila* larval epidermal cells undergo apoptosis during metamorphosis. Upon caspase activation, levels of E-cadherin (cyan) are diminished around the apoptotic cell, and cell-cell adhesions with neighboring non-dying cells are disengaged. The contraction of two actomyosin cables (myosin in red) formed in dying and neighboring cells drives apoptotic cell extrusion from a tissue. See Research article by Teng et al. on p. 95.

EDITORIAL

1  The times they are a-changin’
Pourquié, O.

SPOTLIGHT

3 Towards a CRISPR view of early human development: applications, limitations and ethical concerns of genome editing in human embryos
Plaza Reyes, A. and Lanner, F.

CORRESPONDENCE

8 Defective adgra2 (gpr124) splicing and function in zebrafish ouchless mutants

MEETING REVIEW

12 From stem cells to human development: a distinctly human perspective on early embryology, cellular differentiation and translational research
Craft, A. M. and Johnson, M.

REVIEW

17 Understanding development and stem cells using single cell-based analyses of gene expression
Kumar, P., Tan, Y. and Cahan, P.

RESEARCH REPORTS

33 Tfap2 and Sox1/2/3 cooperatively specify ectodermal fates in ascidian embryos
Imai, K. S., Hikawa, H., Kobayashi, K. and Satou, Y.

38 Differential temporal control of Foxa.a and Zic-r.b specifies brain versus notochord fate in the ascidian embryo
Ikeda, T. and Satou, Y.

RESEARCH ARTICLES

44 Wt1 directs the lineage specification of sertoli and granulosa cells by repressing Sf1 expression

54 A set of simple cell processes is sufficient to model spiral cleavage

63 Rewiring of embryonic glucose metabolism via suppression of PFK-1 and aldolase during mouse chorioallantoic branching
Miyazawa, H., Yamaguchi, Y., Sugiyura, Y., Honda, K., Kondo, K., Matsuda, F., Yamamoto, T., Suematsu, M. and Miura, M.

74 Atypical chemokine receptor ACKR2 controls branching morphogenesis in the developing mammary gland

83 PDGFRα controls the balance of stromal and adipogenic cells during adipose tissue organogenesis
Sun, C., Berry, W. L. and Olson, L. E.

95 Remodeling of adhesion and modulation of mechanical tensile forces during apoptosis in *Drosophila* epithelium
Teng, X., Qin, L., Le Borgne, R. and Toyama, Y.

106 Conserved and novel functions of programmed cellular senescence during vertebrate development
Davaapil, H., Brockes, J. P. and Yun, M. H.

115 Interactions between mural cells and endothelial cells stabilize the developing zebrafish dorsal aorta
Stratman, A. N., Pezoa, S. A., Farrelly, O. M., Castranova, D., Dye, L. E., III, Butler, M. G., Sidik, H., Talbot, W. S. and Weinstein, B. M.

128 Translation repression by maternal RNA binding protein Zar1 is essential for early oogenesis in zebrafish

139 The *Drosophila* Hox gene *Ultrabithorax* acts in both muscles and motoneurons to orchestrate formation of specific neuromuscular connections
Hessinger, C., Technau, G. M. and Rogulja-Ortmann, A.

151 Modulation of apical constriction by Wnt signaling is required for lung epithelial shape transition
Fumoto, K., Takigawa-Imamura, H., Sumiyama, K., Kaniwa, T. and Kikuchi, A.

163 MS23, a master basic helix-loop-helix factor, regulates the specification and development of the tapetum in maize

PUBLISHER’S NOTE

Publisher’s Note: Modulation of dorsal root ganglion development by ErbB signaling and the scaffold protein Sorbs3 by Malmquist et al. Development doi:10.1242/dev.084640
Pourquié, O.