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Jean E. Schwarzbauer, W. Mark Leader, and David G. Drubin
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Discovery of keratin function and role in genetic diseases: the year that 1991 was
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ARTICLES

Cell Interactions

VE-cadherin interacts with cell polarity protein Pals1 to regulate vascular lumen formation
Benjamin F. Brinkmann, Tim Steinbacher, Christian Hartmann, Daniel Kummer, Denise Pajonczyk, Fatemeh Mirzapourshafiyi, Masanori Nakayama, Thomas Weide, Volker Gerke, and Klaus Ebnet
2811-2821

Blood vessel tubulogenesis requires the establishment of apicobasal polarity of endothelial cells. A novel interaction is described of the cell adhesion molecule VE-cadherin with the cell polarity protein Pals1. The activity of VE-cadherin in regulation of endothelial lumen formation depends on its interaction with both Pals1 and Par3.

Cytoskeleton

Abl suppresses cell extrusion and intercalation during epithelium folding
Jeanne N. Jodoin and Adam C. Martin
2822-2832

Apical constriction drives tissue folding or cell extrusion in different contexts, but the mechanisms that dictate the specific outcomes are poorly understood. Live imaging shows that Abl has a critical role in inhibiting cell extrusion during tissue folding by promoting apical–basal polarity and adherens junction positioning.

Centrosome centering and decentering by microtubule network rearrangement
Gaëlle Letort, Francois Nedelec, Laurent Blanchoin, and Manuel Théry
2833-2843

Numerical simulations are used to investigate the role of microtubule network architecture in centrosome positioning. Microtubule gliding along cell edges and pivoting around the centrosome are key regulators of the orientation of pushing forces, the magnitude of which depends on the number, dynamics, and stiffness of microtubules.

Formin-mediated actin polymerization at cell–cell junctions stabilizes E-cadherin and maintains monolayer integrity during wound repair
Megha Vaman Rao and Ronen Zaidel-Bar
2844-2856

Cadherin-mediated cell–cell adhesion is required for epithelial tissue integrity in homeostasis, during development, and in tissue repair. Fmnl3 and mDia1 cooperate in stabilizing E-cadherin at cell–cell junctions and facilitate strong cell adhesion and monolayer cohesion during collective cell migration.

Membrane Trafficking

Numb regulates the balance between Notch recycling and late-endosome targeting in Drosophila neural progenitor cells
Seth A. Johnson, Diana Zitserman, and Fabrice Roegiers
2857-2866

Steady-state and pulse-labeling techniques are used to follow Notch receptors in sensory organ precursor cells in Drosophila. Numb and L(2)gl antagonize a pool of Notch receptors, and Numb promotes Notch targeting to late endosomes in Drosophila neural progenitors to regulate Notch signaling and cell fate.
A previously uncharacterized WD40 domain–containing protein named TSSC1 is shown to interact with the GARP and EARP tethering complexes, promoting retrograde transport of Shiga toxin from endosomes to the TGN, as well as recycling internalized transferrin from endosomes to the plasma membrane.

Sir2 has been reported to be recruited to dicentric chromosomes under tension, and these chromosomes are especially vulnerable to breakage in sir2Δ mutants. Loss of viability in such mutants is an indirect effect of repression of nonhomologous end joining in Sir− mutants. Enrichment of Sir2 at chromosomes under tension is not observed.