



CDB SEMINAR

Heinz Georg Belting

Biozentrum, University of Basel

Tuesday, February 13, 2018

15:00-16:00 Seminar Room A7F

Hang on and move – junctional dynamics during vascular morphogenesis

Summary

Vascular networks are formed by an array of morphogenetic processes, such as sprout outgrowth, anastomosis and pruning, which depend on the tight coordination of dynamic cell behaviors. We are interested in the mechanistic principles, which underlie blood vessel formation and remodeling. In particular, we are studying how endothelial cell-cell interactions and junctional activities drive cell rearrangements and cell shape changes during sprouting angiogenesis and tube formation. By performing in vivo high resolution time-lapse imaging and genetic analysis in zebrafish embryos, we can show that endothelial cells (ECs) use oriented, oscillating lamellipodia-like protrusions, which emanate and are connected to EC junctions – hence, we call these structures junction-based lamellipodia or JBL. Taken together, our observations suggest a novel oscillating ratchet-like mechanism, which is used by endothelial cells to move along or over each other and thus provides the physical means for cell rearrangements.

Host:

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