

Molecular Physiology Colloquium

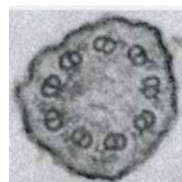
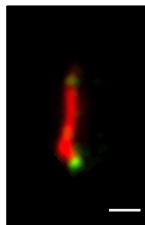
Monday, May 18., 2015, 17 (c.t.)

Coordination of TGF β /BMP signaling at the primary cilium

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The regulation of cellular and physiological processes in vertebrates relies on the balanced activation of multiple signaling pathways, which often are integrated into higher order networks that dictate the biological output of pathway activity. A better understanding of the molecular mechanisms that regulate pathway interactions is necessary for improving our understanding of how these networks control developmental processes and tissue homeostasis. Our research is focused on understanding how pathway cilia, which are microtubule-projecting in a single copy from types in our body. We recently



associated with primary cilia to including cell cycle control and migration as well as lineage commitment and differentiation of stem cells into either neurons or cardiomyocytes. Signal transduction at cilia relies on endocytosis of the receptors at the ciliary pocket to control the balancing between canonical and non-canonical TGF β signaling. Since TGF β /BMP signaling highly cross-talks with other pathways known to be associated with primary cilia, we suggest that the cilium/centrosome axis may function as a hot spot for the integration of different signaling systems, which when aberrantly regulated may cause severe developmental disorders and diseases in the adult.



Lecture hall "HS 18", Institute of Zoology, Johann-J-Becher Weg 9,
Johannes Gutenberg University Campus

Everybody is very welcome!

Host: Univ.-Prof. U. Wolfrum