

## Molecular pathways in the control of energy homeostasis

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Development and progression of metabolic disorders, including obesity and type 2 diabetes, are influenced by genetic, epigenetic, and environmental factors, most notably nutritional components. At the molecular level, major components of the Metabolic Syndrome, including insulin resistance, dyslipidemia, and chronic inflammation are triggered by the de-regulation of specific molecular checkpoints in energy homeostasis. A metabolic checkpoint function can in many cases be attributed to the activity of transcription factors, integrating and translating dietary, hormonal, and inflammatory signals into alterations of genetic and metabolic programs in corresponding target tissues. This presentation will discuss if and how aberrations in normal transcription factor functions are causally linked to the pathogenesis of metabolic dysfunction in obesity-related type 2 diabetes, particularly addressing the role of hepatic and adipose tissue regulatory circuits in systemic energy homeostasis and their implications for targeted therapeutic approaches.

### Biography

Stephan Herzig completed his Ph.D. in 1999 at the University of Göttingen, Germany. After postdoctoral studies at the Salk Institute, La Jolla, CA, he established an independent Junior Research Group at the German Cancer Research Center (DKFZ) in Heidelberg, Germany, in 2004. In 2010, he became Head of the Department "Molecular Metabolic Control" at the DKFZ, and since 2011 he is heading a joint research division between the DKFZ, Heidelberg University and Heidelberg University Hospital. In 2012, he became a full professor at Heidelberg University. His publications include papers in *Nature* (2001, 2003), *Science* (2003, 2010), and *Cell Metabolism* (2008, 2011, 2013).