

# ***SFB35 Colloquia in Membrane Transport***

Venue: Medical University Vienna, Center for Physiology and Pharmacology,  
Institute of Pharmacology, Waehringergasse 13a, 1090 Vienna,

"Leseraum"

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Friday      21.11.2014 14.00 s.t.      **Elena Pohl** (host: H. Sitte)  
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## ***"Mitochondrial uncoupling proteins: insights in transport mechanism, structure and subcellular distribution"***

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Abstract.

ATP generation is fueled by an electrical potential across the inner mitochondrial membrane, which can be decreased by proton leak facilitated by uncoupling proteins (UCPs). Apart from UCP1 which supports non-shivering thermogenesis, the function, transport mode and even tissue distribution of the other members of uncoupling protein subfamily (UCP2-UCP5) remain highly controversial. UCPs are implicated in the pathophysiology of different diseases such as obesity, diabetes, ischemia, cancer and neurodegenerative disorders. We use different systems, including recombinant proteins reconstituted in planar bilayers, stem cells and knockout mice (1-4), to distinguish between two main hypotheses suggesting the involvement of UCPs in either the regulation of ROS production or in cell metabolism. In my talk I will focus on our recent results that address the expression pattern, transport mechanism and regulation of UCP1, UCP2 and UCP4.

References

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3. Rupprecht A, Sittner D, Smorodchenko A, Hilse KE, Goyn J, Moldzio R, Seiler AE, Brauer AU, Pohl EE (2014) Uncoupling protein 2 and 4 expression pattern during stem cell differentiation provides new insight into their putative function. *PLoS ONE* 9:e88474.
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