

Colloquia in Cellular Signaling

Venue: Medical University Vienna, Center for Physiology and Pharmacology,
Institute of Pharmacology, Waehringerstrasse 13a, 1090 Vienna, "**Leseraum**".
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11:00

Host: M. Freissmuth

Regulation of SNARE assembly in budding yeast & structural dissection of a polymeric cytoskeletal protein from *Trypanosoma brucei*

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Abstract:

Our group focuses on structural and functional studies of membrane trafficking and organelle biogenesis. I will present some of our recent work on these subjects. First, I will talk about the regulation of SNARE assembly in budding yeast. While the SNAREs constitute the core fusion machinery in membrane trafficking, the assembly of the SNARE complex is intrinsically slow. Factors that promote SNARE assembly in budding yeast had remained elusive. Recently, we have found that a component of the exocyst complex, which mediates vesicle tethering, directly interacts with the exocytic t-SNARE to promote the assembly of a binary t-SNARE complex and catalyze a pivotal rate-limiting step in membrane fusion. Besides the crystal structure we published early this year, we have just determined the crystal structure of another SNARE/exocyst complex. Altogether, our work reveals a novel regulatory mechanism for SNARE complex assembly and membrane fusion. Secondly, I will briefly present our structural dissection of BILBO1, a polymeric cytoskeletal protein from the protozoan parasite *T. brucei*. Employing integrative structural biology approaches, we have revealed an interesting assembly mechanism of the protein and its role as a versatile scaffold to recruit many other proteins at the flagellar pocket collar of the parasite.