IGS GFG

SFB 635
Posttranslational control of protein function

Seminars in Genetics and Molecular Cell Biology

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Molecular mechanism of G protein-mediated membrane fusion

Atlastins belong to the superfamily of dynamin-related large G proteins that are activated by dimerization (GADs). In contrast to dynamin, a protein that catalyzes membrane fission, atlastins have been shown to facilitate homotypic membrane fusion, an activity that is crucial for the formation of the tubular endoplasmic reticulum (ER) network. Mechanistically, atlastins are involved in the formation of three-way junctions in the ER. Its functional importance is illustrated by a large number of mutations in the atlastin gene that are associated with the hereditary spastic paraplegia (HSP), a neurodegenerative disorder affecting movement and coordination. By using various structural and biochemical approaches we aim at elucidating the molecular mechanisms that allow these proteins to exert the necessary forces for membrane fusion. In addition, these assays allow us to determine the effects that HSP-associated mutations have on atlastin-1's activity, providing insights into pathogenesis.

Monday, December 19, 2011 at 05.00 p. m.

Institute for Genetics,
Zülpicher Str. 47 a, Lecture hall, 4th floor

Host: Gerrit Praefcke, Institute for Genetics/ZMMK,
University of Cologne

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