sfb 635
posttranslational control
of protein function

IGS DHD

Seminars in Genetics and Molecular Cell Biology

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The Mitochondria-Associated Membrane (MAM): A Cellular Structure where Redox and Rabs decide on Cancer and Neurodegeneration

Cell biological research during the past decade has identified calcium exchange between the endoplasmic reticulum (ER) and mitochondria as a central regulator of cell metabolism. The extent of this intracellular calcium flux determines ATP production during resting conditions, but also during cellular stress conditions. This important insight explains why numerous proteins localized to the ER-mitochondria contacts (called mitochondria-associated membrane, MAM) have roles in diseases such as cancer or neurodegeneration.
Our laboratory has discovered that ER chaperones and oxidoreductases regulate ER-mitochondria calcium flux, together with cytosolic factors that determine their localization. Consistent with this finding and the postulated role of ER-mitochondria calcium flux for cell metabolism and survival, both groups of proteins have emerged as tumor suppressors, oncoproteins as well as proteins with roles in neurodegeneration. Our current research aims to understand the functioning of these proteins from a cell biological view in cancer and neurodegeneration. Examples to be discussed will be the tumor suppressor TMX1 and Rab32, a marker for neuroinflammation.

Monday, May 4, 2015 at 11.15 a.m.

CECAD Research Center, Joseph-Stelzmann-Straße 26,
lecture hall, ground floor

Host: Stefan Höning, Institute for Biochemistry I,
Medical Faculty, University of Cologne

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