



MINISYMPOSIUM

PDZ domain proteins: new physiological functions and possible role as drug targets

Friday June 10th, 2011, 10:00-12:30

**Dam Auditoriet
Panum Institute**

PDZ (PSD-95/Discs-large/ZO-1 homology) domains are among the most common protein recognition domains with estimated over 270 domains encoded by the human genome. They mediate cellular protein-protein interactions and serve important roles in receptor targeting and in the assembly of receptor protein signaling complexes. Recent efforts have unraveled many new physiological and pathophysiological functions of PDZ domain proteins, and there is increasing evidence that targeting PDZ domain proteins is beneficial in cancer stroke, addiction and neuropathic pain. Protein interacting with C kinase 1 (PICK1) is a widely distributed PDZ domain protein that also contains a lipid membrane binding BAR (Bin/amphiphysin/Rvs) domain. PICK1 is known for its key role in synaptic plasticity by regulating trafficking of AMPA-type ionotropic glutamate receptors. However, new discoveries have indicated critical roles of this protein also outside the CNS. This minisymposium will describe the most recent insights into the physiological functions of PDZ domain proteins such as PICK1 and evaluate PDZ mediated protein-protein interactions as possible targets in drug discovery efforts. The use of blocking peptides to alter protein-protein interactions and regulate receptor surface expression and function will also be discussed.

Program

- 10:00-10:30 **Jun Xia, Hong Kong University of Science and Technology, Hong Kong**
Role of PICK1 and ICA69 complex in protein trafficking
- 10:30-10:50 **Birgitte Holst, University of Copenhagen**
Somatic growth retardation in mice and Drosophila lacking the BAR domain protein PICK1
- 10:50-11:10 **Kenneth Lindegaard Madsen, University of Copenhagen**
Molecular basis for curvature sensitive lipid binding of PICK1 and related BAR domain proteins
- 11:10-11:30 **Coffee break**
- 11:30-12:00 **Kristian Strømgaard, University of Copenhagen**
Inhibition of neuronal PDZ domains
- 12:00-12:30 **Kumlesh K. Dev, Molecular Neuropharmacology, Trinity College Dublin**
The trafficking and signaling of sphingosine 1-phosphate receptors

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