Joint KJELDGAARD & DANDRITE Lecture

Thursday 17 March 2016 at 13.15 - 14.00
Auditorium F (building 1534-125), Aarhus University
Ny Munkegade, 8000 Aarhus C

Coffee, cake, and informal discussions with the speaker from 14:00
PhD session with the speaker from 14:30


A Joint Kjeldgaard & DANDRITE Lecture

Liz Carpenter
Structural Genomics Consortium
Nuffield Department of Medicine
University of Oxford
United Kingdom

Structural Biology of Human Membrane Proteins at the SGC

Structural biology of membrane proteins is going through a revolution with the advent of new technologies, which will allow us to solve structures of even the most challenging of targets. New structural information will open up our understanding of the function of these proteins and their role in disease, providing novel routes to therapies. Structural biology and biophysical methods are however still dependant on the supply of high quality protein samples. At the SGC we have developed a pipeline for producing human membrane proteins, growing crystals and solving structures. We have now solved seven structures of human membrane proteins, from a range of families, using standard X-ray crystallography, serial femtosecond crystallography and electron microscopy. These methods have allowed us to begin to understand how the polymodal TREK-1 and TREK-2 K2P potassium channels are gated. We have solved these structures in several conformations, including one using serial femtosecond crystallography, which has allowed us to see a new conformation of the channel, in a membrane-like environment. These structures, combined with simulations and electrophysiology data, revealed how these channels can be gated by membrane stretch and inhibited by small molecule drugs.

Host: Poul Nissen, Dept. Molecular Biology and Genetics,
DANDRITE - Danish Research Institute of Translational Neuroscience,
Aarhus University

The Kjeldgaard Lecture Series is organised by
Dept. Molecular Biology and Genetics
www.mbg.au.dk/lectures

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The DANDRITE Seminar Series is organised by
Danish Research Institute of Translational Neuroscience
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