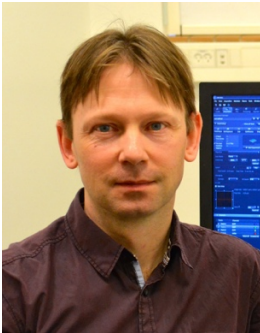


Guest lecture

The Blood-Brain Barrier: receptor trafficking and drug delivery



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Date/time: 20 August 2019 at 10.30

Place: BMB Seminar room

Host: Professor Nils J. Færgeman, BMB, SDU

Abstract: Due to the worldwide increased life expectancy, more and more people are getting affected by neurodegenerative disorders like Alzheimer's and Parkinson diseases. Consequently, there is an increased focus on getting biologics effectively into the brain. The Blood-Brain Barrier (BBB) is the primary target for drug delivery to the brain. The BBB is found at the interface of the circulatory and central nervous system, and is a key regulatory site for homeostatic control of the central nervous system microenvironment, which is essential for proper function and protection of the nervous system. The site of the BBB is the endothelial cells lining the blood vessel lumen. In brain capillaries, endothelial cells form complex intercellular tight junctions and strongly polarized expression patterns of particular influx and efflux transporters ensure highly specific molecular transport between the blood and the brain. However, this structural organization makes up a very

tight and selective barrier, which in makes it difficult to develop an efficient strategy for delivery of biologics into the brain.

This talk will go over the structural organisation of the BBB and how transporters and receptors transport large and small molecules in and out of the brain. Secondly, an in vivo model based on primary porcine cells optimized for transport studies and drug delivery will be introduced. The last part, will focus on receptor trafficking and how receptors might be used to deliver nanoparticles and therapeutic antibodies into the brain.