

DANDRITE Topical Seminar

Monday 24 October 2016
at 13.15 – 14.00

The Biomedicine Auditorium, building 1170, 3rd floor, room 347
Ole Worms Allé, 8000 Aarhus C



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Dendritic synaptic integration in striatal spiny projection neurons and Huntington's disease

Huntington's disease (HD) is an autosomal dominant neurodegenerative disorder presenting motor, cognitive and psychiatric deficits. Among the most vulnerable neuronal populations in HD are striatal spiny projection neurons (SPNs), key components of the basal ganglia circuitry governing action selection and motor learning. In recent years, the vulnerability of SPNs in HD has been attributed to a loss of cortically supplied brain-derived neurotrophic factor (BDNF). In my seminar I will discuss work we have done to elucidate the mechanisms governing SPN dendritic synaptic integration and plasticity. I will then discuss how SPN glutamatergic synaptic plasticity is lost in a synapse-specific manner in mouse models of HD. The loss of synaptic plasticity is due to impaired BDNF signaling through postsynaptic TrkB receptors, but surprisingly not diminished BDNF production or release. I will present data showing that synaptic plasticity can be rescued, and propose an alternative strategy to BDNF replacement as a potential treatment for HD.

Host: Group Leader Anders Nykjær, DANDRITE, Dept. of Biomedicine, Aarhus University