

Abstract for MTTN 2023

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Axonal and dendritic transport in the context of Alzheimer's disease

Transport of cargo via motor proteins operating on microtubules is crucial for the proper functioning of the nervous system. Key proteins linked to Alzheimer's disease pathogenesis are linked to microtubule-based transport either as cargo (e.g., amyloid precursor protein) or as regulators of microtubule structure (e.g., tau). Synaptic dysfunction is one of the earliest events in Alzheimer's disease and the correct sorting of presynaptic and postsynaptic cargo to axons and dendrites (and eventually into dendritic spines) rely on microtubule motors. In recent years, studying axonal and dendritic transport has been facilitated by the use of multi-chamber microfluidic devices. In this talk, I will illustrate axonal transport experiments related to Alzheimer's disease, based on different model systems (from primary rodent neurons to human induced neurons).