



Principal Investigator Grant

Project

«Brain-derived extracellular vesicles as diagnostic tool for tauopathies»

Granted amount	CHF 300'000
Starting date	1.1.2021
Duration	36 months



Main applicant

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Research for diagnostic tools

Tauopathies are a group of neurodegenerative diseases characterized by abnormal hyperphosphorylation/aggregation of the Tau protein. Although post-mortem diagnostic is performed routinely with great accuracy, pre-mortem diagnostic of tauopathies remains problematic before the convergence of clinical symptoms.

In this project, we propose to use brain-derived extracellular vesicles for the diagnostic of tauopathies. Using recently developed protocols, we will isolate sub-populations of vesicles from fresh frozen brain samples from patients (diagnosed with different tauopathies) or cerebrospinal fluid (CSF) and plasma from living patients with cognitive disorders. After purification of the vesicles, we will use a combination of mass spectrometry and a novel Tau species-sensitive cell assay to determine the pathological signature of the vesicles. We will then compare this data with similar data obtained from blood-derived and CSF-derived exosomes of a longitudinal cohort of living patients. By comparing post-mortem and live patient profiles, and integrating all clinical information (collected by the Lausanne Memory Center) we will use statistical approaches to propose a classification and diagnosis of the different tauopathies