



# CBI SEMINAR



11h00 A.M

Monday  
November 07 TH 2022

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### Brain-Derived Extracellular Vesicles and Neurodegenerative dementia: from understanding to diagnosis

Progressive neurodegenerative dementias affect brain cells and their connections. Specific protein deregulation is observed in each of them, e.g. Tau in Alzheimer's dementia. Recently, in human patients astrocytes, we found accumulation of a Tau isoform that is absent in healthy conditions. This impairs mitochondrial function *in vitro* and *in vivo*, leading to neuronal dysfunction and memory impairment (1). Aberrant Tau expression in astrocytes thus appears as an underestimated mechanism worth exploring.

More recently, using a combination of innovative technologies (2), we demonstrated that extracellular vesicles circulating in the brain play an active role in the propagation of brain pathology (3). Thus, extracellular vesicles appear as a potential biofluid diagnostic tool for neurodegenerative dementias.

(1) Richetin et al. *Nat Neurosci.* 2020;23(12):1567-79, (2) Espourteille J et al. *J Vis Exp.* 2021(177) ; (3) Leroux et al. *Mol Ther.* 2022;30(2):782-97.

<https://www.chuv.ch/fr/psychiatrie/dp-home/recherche/centres-et-unites-de-recherche/centre-de-neurosciences-psychiatriques-cnp/unite-de-recherche-sur-la-neurobiologie-du-vieillessement>



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