



## Principal Investigator Grant

### Project

«Astrocyte mitochondria and neuronal function: A novel axis for Alzheimer's disease treatment»

<b>Granted amount</b>	CHF 300'000
<b>Starting date</b>	1.10.2021
<b>Duration</b>	36 months



### Main applicant

Dr. Jean-Yves Chatton  
Department of Fundamental Neurosciences  
University of Lausanne  
Rue du Bugnon 9  
1005 Lausanne

### New Alzheimer's treatment

The mechanisms of pathogenesis in Alzheimer's disease have been intensely studied during the last decades, yet, no effective treatment exists to prevent or cure the disease. The proposed research aims at exploring a non-traditional therapeutic approach targeting brain astrocytes rather than neurons. In previous studies, we found that acting on mitochondria of astrocytes within the brain rescues memory impairments in transgenic mouse models of Alzheimer's disease, along with the correlated alterations in neuronal function and brain metabolite profile. While these observations are good indications that the strategy is effective, they also raise important questions regarding the mechanisms engaged in the restoration of the cognitive and neuronal phenotypes.

In the proposed research, we will elucidate these mechanisms by combining approaches of electrophysiology, electron microscopy, magnetic resonance imaging, and mathematical modelling. We will notably explore novel mechanisms of mitochondrial transfer between astrocytes and neurons, which could prove essential for future treatments.