Human Tau Oligomers Enable Alzheimer Models for Target Validation and Drug Development

- Soluble oligomeric forms of human tau protein (ht-O) are likely to play a major role in Alzheimer’s disease (AD) and other so-called tauopathies
- Translational in vitro & in vivo models are essential to reduce the significant attrition further clinical trials
- Here, we report novel tauopathy models induced by minute amounts of highly reproducible human tau oligomer (ht-O) preparations
- ht-O induce neuronal cell death in rodent primary neurons and in iPS cell derived human neurons
- ht-O induce release of pro-inflammatory cytokines of rodent primary astrocytes
- ht-O reduce spontaneous electrical activity recorded by CMOS-MEAs
- In wild-type mice, a bilateral injection ht-O into the hippocampus (CA1) results in dramatic impairment of cognitive functions
- SynAging models open new avenues for neuroprotective intervention strategies by targeting ht-O

ht-O-Induced Degeneration on Human iPS Cell-Derived Neurons

ht-O-Induced Time Dependent Cognitive Deficit in the Spatial Recognition Test

ht-O-Induced IL-6 Release from Primary Astrocytes (ELISA measurements)

ht-O-Induced Cognitive Deficit in the Novel Object Recognition Test