The UPR in the cell-to-cell spreading of tau pathology in dementia.

https://neurodegenerationresearch.eu/survey/the-upr-in-the-cell-to-cell-spreading-of-tau-pathology-in-dementia/

Principal Investigators

Dr. W. Scheper

Institution

VU University Medical Center

Contact information of lead PI
Country

Netherlands

Title of project or programme

The UPR in the cell-to-cell spreading of tau pathology in dementia.

Source of funding information

ZonMw

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€ 862,533

Start date of award

01/12/2014

Total duration of award in years

4.0

The project/programme is most relevant to:

Alzheimer's disease & other dementias

Keywords
Research Abstract

The microtubule associated protein tau plays an essential role in the pathogenesis and spreading of the disease pathology in by far the great majority of dementias. Tau is phosphorylated and forms aggregates in neurons, leading to neuronal dysfunction and neurodegeneration. In this project we will explore an entirely novel insight on how tau pathology spreads and progresses throughout the brain.

The aim of this study is to identify key factors and signalling pathways in UPR transmission towards early diagnosis and therapy of tauopathies.

In this project we will address the following objectives:
1. The UPR signaling routes and transfer mechanism involved in UPR transmission.
2. The identity of the secreted protein and RNA factor(s) involved in UPR transmission.
3. The involvement of UPR transmission in the spreading of tau pathology.
4. The presence of newly identified UPR transmission signaling pathways and factors in patients with tau related dementia.

We use state-of-the-art molecular and cell biological techniques, proteomics and miRNA profiling technology to identify key factors and signaling pathways involved in the transmission of the UPR and tau pathology. A private partner will develop stable tau oligomers, an important tool for this project and neurodegenerative research and diagnostics in general. Within the consortium unique collections of patient material (brain tissue, cerebrospinal fluid (CSF), blood) are available for validation of the results as well as to indicate the potential for translation in diagnostic and therapeutic follow-up studies.

The results from this study provide the first step in the development of a new disease modifying drug therapy that prevents disease progression. In addition, based on the early involvement of UPR activation in pathology, identification of UPR transmission factor(s) in the extracellular space would provide a CSF or blood biomarker for early diagnosis.

Lay Summary
Further information available at:

Types:
Investments > €500k

Member States:
Netherlands

Diseases:
Alzheimer's disease & other dementias

Years:
2016

Database Categories:
N/A

Database Tags:
N/A