

The role of astrocytes in development and progression of Alzheimer's disease

<https://neurodegenerationresearch.eu/survey/the-role-of-astrocytes-in-development-and-progression-of-alzheimer%c2%92s-disease/>

Principal Investigators

Anna Erlandsson

Institution

Uppsala University

Contact information of lead PI

Country

Sweden

Title of project or programme

The role of astrocytes in development and progression of Alzheimer's disease

Source of funding information

Swedish Research Council

Total sum awarded (Euro)

€ 228,509

Start date of award

01/01/2016

Total duration of award in years

3

Keywords

Research Abstract

Knowledge about the cellular mechanisms behind initiation and spreading of Alzheimer's disease (AD) is still very limited. Decades of research have focused on neuronal abnormalities in AD pathology, but recently more attention has been given to the glial cells. The aim with this project is to clarify the involvement of astrocytes in AD development and progression and to investigate the astrocytes therapeutic potential. Our preliminary results demonstrate that astrocytes engulf large amounts amyloid-beta (A β) that are stored, rather than degraded by the cells. The accumulation of A β by the astrocytes results in lysosomal defects and exosome-induced apoptosis of neurons. To further elucidate the role of astrocytes in AD, we will use

primary cultures of astrocytes and neurons and analyze brain tissue from AD patients and transgenic mice. Moreover, we will examine the possibility to increase the astrocytes degradation of A β by Rab27 inhibition and antibody treatment. We believe that A β accumulation by astrocytes is especially important in late onset AD, since this form of the disease depends on insufficient A β degradation rather than increased A β production. Being the most numerous cell type in the brain, astrocytes constitute a potent treatment target and our results will contribute with important data to the research field.

Further information available at:

Types:

Investments < €500k

Member States:

Sweden

Diseases:

N/A

Years:

2016

Database Categories:

N/A

Database Tags:

N/A