Structural biology of the LRP1-Abeta interaction

https://neurodegenerationresearch.eu/survey/structural-biology-of-the-lrp1-abeta-interaction/

Principal Investigators

Kaare Teilum

Institution

Københavns Universitet

Contact information of lead PI
Country

Denmark

Title of project or programme

Structural biology of the LRP1-Abeta interaction

Source of funding information

Lundbeckfonden

Total sum awarded (Euro)

€ 134,528

Start date of award

01/01/2014

Total duration of award in years

3

Keywords
Research Abstract

Alzheimers disease (AD) is associated with the accumulation and fibrillation of amyloid ß-peptide (Aß) in the brain. The incidence of AD is age dependent and 30% of the population above 80 years gets AD. The accumulation of Aß in the brain is caused either by increased production or impaired clearance of the peptide. In this project we want to characterize the interaction between the low density lipoprotein receptor-related protein 1 (LRP1) and Aß. The binding between Aß and LRP1 appears important for maintaining Aß homeostasis. Thus, LRP1 is involved in transporting Aß across the blood-brain barrier and also binds circulating Aß for clearance in the liver. We have preliminary data that demonstrate that a fragment of LRP1 efficiently inhibits Aß fibrillation. Little is, however, known about the molecular details of the

interaction. In this project we will use biophysical techniques to determine the structure of the LRP1/ Aß complex. We will also determine the mechanisms both of the complex formation and of the fibrillation inhibition. The insights from the project will potentially add important new details about the transport of Aß out of the brain and about why binding of circulating Aß to LRP1 is impaired in Alzheimer's patients.

Further information available at:

Types:
Investments < €500k

Member States:
Denmark

Diseases:
N/A

Years:
2016

Database Categories:
N/A

Database Tags:
N/A