

# Structural biology of the LRP1-Abeta interaction

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

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### 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  $\beta$ -peptide ( $A\beta$ ) in the brain. The incidence of AD is age dependent and 30% of the population above 80 years gets AD. The accumulation of  $A\beta$  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  $A\beta$ . The binding between  $A\beta$  and LRP1 appears important for maintaining  $A\beta$  homeostasis. Thus, LRP1 is involved in transporting  $A\beta$  across the blood-brain barrier and also binds circulating  $A\beta$  for clearance in the liver. We have preliminary data that demonstrate that a fragment of LRP1 efficiently inhibits  $A\beta$  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/ A $\beta$  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 A $\beta$  out of the brain and about why binding of circulating A $\beta$  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:**

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