

Pathways to Alzheimer's disease

<https://www.neurodegenerationresearch.eu/survey/pathways-to-alzheimers-disease/>

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Country

Sweden

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Pathways to Alzheimer's disease

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5

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Research Abstract

Alzheimer's disease (AD) is characterised by deposits of amyloid beta (Abeta) in senile plaques in the brain. One of the major unresolved questions in AD research is why Abeta, which is produced by all human beings, turns toxic and starts damaging nerve cells only in some individuals while others appear protected. We hypothesise that Abeta starts to accumulate in the brain of certain individuals due to defective clearance of the peptide. This clearance failure may be linked to defective enzymatic degradation of Abeta or impaired binding of Abeta monomers to carrier proteins. Once aggregated, Abeta may acquire chemical modifications during incubation in the brain over years, which makes it more prone to form structures that over-activate the immune system, resulting in frank neurotoxicity. We also hypothesise that certain individuals are more or less sensitive to Abeta toxicity. Using patient materials and cell, zebrafish and hippocampal slice models, we will address these hypotheses with special

emphasis on Abeta-interacting proteins and peptides, Abeta-degrading proteases and the role of the microglial defence system as a potential mediator of Abeta toxicity. The project may give important clues on cause-and-effect relationships in the early pathogenic process of AD and should result in novel targets for treatment and new biomarkers for the disease.

Further information available at:

Types:

Investments < €500k

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Sweden

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