

# Alzheimer's disease/neuropharmacology

## Challenges

Age-related neurodegenerative disorders are an increasing societal problem due to demographic changes and the scarcity of efficacious therapeutics. Much evidence suggests that protein misfolding with brain region-dependent proteinaceous deposition is an important pathogenic process in many of these diseases. In Alzheimer's disease, the most common cause of age-related dementia, there is faulty A $\beta$ -metabolism with an imbalance in production and clearance of A $\beta$ -peptides which leads to the accumulation of aggregation-prone A $\beta$ . Challenges are to understand mechanisms of A $\beta$ -related neurodegeneration in brain, to identify good drug-targets in the pathogenesis and to devise therapeutics that reaches the brain parenchyma. Better ways to predict drug-efficacy in an animal model and/or in small patient cohorts e.g. with biomarkers is also much needed.

## Projects

- Impact of innate immunity on A $\beta$ -clearance in Alzheimer's disease
- Role of heparan sulfate proteoglycans in A $\beta$ -amyloidosis
- Mechanisms of A $\beta$ -neurotoxicity

## Group leader

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