JPND research
EU Joint Programme – Neurodegenerative Disease Research

NeuTARGETS

Targeting the propagation of pathogenic protein assemblies in neurodegenerative disease

Similar to prion diseases, more common fatal neurodegenerative diseases such as Alzheimer's and Parkinson's disease are linked to the aggregation of different proteins (including Tau, Abeta and alpha-synuclein in the brain of affected patients. Furthermore most of the resulting brain lesions initially appear in specific brain areas and the pathology progresses along interconnected areas in a predictable manner. Interestingly, it has been shown that similar to the prion protein, these proteins are able to act as seed and to cause the aggregation of the normal protein. Therefore propagation of the aggregates in the brain could be a common mechanism for the propagation of these diseases.

In this proposal we want to identify the conditions that lead to aggregation of Abeta and a-synuclein, respectively in Alzheimer's and Parkinson's and to identify possible targets to perturb the formation and the propagation of the aggregates. We will also analyze the pathway of spreading of these aggregates between neurons in order to identify specific target to stop their diffusion in the brain.

Therefore through this project we hope to be able to produce tools that will neutralize the pathological protein assemblies and halt propagation of these incurable diseases at an early and asymptomatic stage.

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* Contributions from participating JPND Member Countries are currently being finalised for this project