# CrossSeeds: Mechanisms of pathogenic protein cross-seeding in neurodegenerative disorders

https://neurodegenerationresearch.eu/survey/crossseeds-mechanisms-of-pathogenic-protein-cross-seeding-in-neurodegenerative-disorders/

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Multiple

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**Country**

Germany|France|Norway

**Title of project or programme**

CrossSeeds: Mechanisms of pathogenic protein cross-seeding in neurodegenerative disorders

**Source of funding information**

JPND-Cross Disease

**Total sum awarded (Euro)**

€ 1,692,885

**Start date of award**

01/01/2015

**Total duration of award in years**

3.0

**The project/programme is most relevant to:**

Alzheimer's disease & other dementias|Parkinson's disease & PD-related disorders|Huntington's disease

**Keywords**
**Research Abstract**

As the acronym “CrossSeeds” implies, this project is based on the hypothesis that a number of brain disorders including Alzheimer’s disease (AD), Parkinson’s disease (PD) and Huntington’s

disease (HD) share common pathogenic mechanisms leading to neurodegeneration.A traditional view on these devastating disorders focuses on individual, disease-specific enzymes and/or aggregating proteins contributing to aspects of neuropathology.
This consortium combines experimental approaches from fundamental, pre-clinical and clinical neuroscience with computational approaches to identify cross-disease pathways leading to pathogenic protein aggregation.
All three diseases have at least one feature in common: aggregation of pathogenic proteins associated with neurodegeneration. For example, Abeta peptides modified by glutaminyl cyclase (QC) to form pyroglutamate (pGlu) act as seed for protein aggregation and provoke neurodegeneration in AD. As shown in preliminary ex- periments the AD-specific peptide pGlu-Abeta is also present in Lewy bodies of substantia nigra dopaminergic neurons of PD subjects and induces cross-seeding of ?-synuclein. Our research expects to substantiate the hypothesis that post-translational modifications such as QC-catalysed pGlu-formation induce or enhance the amyloidogenic properties of Abeta, ?lpha-synuclein and huntingtin

**Lay Summary**
**Further information available at:**

**Types:**
Investments > €500k, JPND Projects

**Member States:**
France, Germany, JPND, Norway

**Diseases:**
Alzheimer's disease & other dementias, Huntington's disease, Parkinson's disease & PD-related disorders

**Years:**
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