UBIQUITIN-DEPENDENT PROTEOLYSIS IN NEUROGENERATIVE DISORDERS

https://neurodegenerationresearch.eu/survey/ubiquitin-dependent-proteolysis-in-neurogenerative-disorders/

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Country

Sweden

Title of project or programme

UBIQUITIN-DEPENDENT PROTEOLYSIS IN NEUROGENERATIVE DISORDERS

Source of funding information

Swedish Research Council

Total sum awarded (Euro)

€ 522,607

Start date of award

01-01-2013

Total duration of award in years

4

The project/programme is most relevant to:

Spinal muscular atrophy (SMA)|Huntington's disease|Spinocerebellar ataxia (SCA)

Keywords
Research Abstract

The ubiquitin/proteasome system (UPS) and macro-autophagy are the two principal proteolytic pathways responsible for the destruction of misfolded, aggregation-prone proteins. These proteolytic systems have in common that conjugation of ubiquitin chains, i.e. ubiquitylation, plays an important role in selecting proteins for destruction. Many neurodegenerative diseases are characterized by the accumulation of misfolded proteins in cellular inclusions. A large body

of evidence suggests that the presence of misfolded proteins affect the ubiquitin homeostasis and impairs protein degradation. Our data suggest that cells activate adaptive ubiquitin-dependent mechanisms, such as macro-autophagy, that prevents a lethal blockade of the UPS. In the present project, we propose to study the interplay between ubiquitin-dependent proteolysis and aggregation-prone proteins in the polyglutamine (polyQ) neurodegenerative disorders: spinobulbar muscular atrophy (SBMA; also known as Kennedy´s disease) and Machado-Joseph disease (MJD). Instead of studying global effects of aggregation-prone proteins, we will now focus on specific ubiquitin-dependent processes that are directly relevant to the native functions of the proteins involved in these diseases. In addition, we want to further explore the possibility to take advantage of the preserved UPS in Huntington´s disease (HD) in accelerating degradation of polyQ proteins.

Lay Summary
Further information available at:

Types:
Investments > €500k

Member States:
Sweden

Diseases:
Huntington's disease, Spinal muscular atrophy (SMA), Spinocerebellar ataxia (SCA)

Years:
2016

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