

Protein quality control and Disease

<https://neurodegenerationresearch.eu/survey/protein-quality-control-and-disease/>

Principal Investigators

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Country

Sweden

Title of project or programme

Protein quality control and Disease

Source of funding information

Swedish Foundation for Strategic Research

Total sum awarded (Euro)

€ 652,884

Start date of award

01/09/2014

Total duration of award in years

5

The project/programme is most relevant to:

Parkinson's disease & PD-related disorders

Keywords

Research Abstract

Cells are highly compartmentalized into numerous membrane-bound organelles such as the Endoplasmic reticulum and mitochondria. The membranes that define each organelle contain unique sets of embedded proteins that impart distinct functionalities to that organelle. A major goal of this proposal is to understand how this compartmentalization is achieved with high fidelity, and how it is regulated to suit constantly changing cellular demands. Mislocalization of proteins is a constant problem faced by the cell. When mislocalization of certain proteins becomes excessive, it can lead to various diseases including neurodegeneration. Thus, the

quality control pathways that selectively recognize and degrade these proteins are crucial to maintaining cellular homeostasis and avoiding disease. The studies proposed in this application aims at understanding the protein quality control and degradation. In the first part, I will explore the role of the of the cytosolic quality control machinery in elimination of mislocalized ER secretory and membrane proteins. In the second part I will study mitochondrial quality control and the role of ER-Mitochondria contacts in Parkinson's disease. I will employ a range of techniques, including biochemical dissection of in vitro reconstituted pathways and molecular genetic studies in cultured cells. We anticipate that our mechanistic studies will shed light on both a fundamental cell biological problem and the molecular basis of various diseases.

Lay Summary

Further information available at:

Types:

Investments > €500k

Member States:

Sweden

Diseases:

Parkinson's disease & PD-related disorders

Years:

2016

Database Categories:

N/A

Database Tags:

N/A