

Autophagy in health and disease.

<https://neurodegenerationresearch.eu/survey/autophagy-in-health-and-disease/>

Name of Fellow

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Institution

Funder

Wellcome Trust

Contact information of fellow

Country

United Kingdom

Title of project/programme

Autophagy in health and disease.

Source of funding information

Wellcome Trust

Total sum awarded (Euro)

€ 4,542,895

Start date of award

01/01/12

Total duration of award in years

6.0

The project/programme is most relevant to:

Neurodegenerative disease in general

Keywords

Alzheimer | Cognitive impairment | Dementia | Huntington | Neurodegen | Parkinson

Research Abstract

Intracellular protein misfolding/aggregation characterises many late-onset neurodegenerative diseases, including Alzheimer s disease, Parkinson s disease, tauopathies, and Huntington s disease (HD)). The mutations causing HD and many related diseases confer novel toxic functions on the specific protein. Thus, it is important to understand the factors regulating the

levels of these proteins. (Macro) autophagy clears long-lived proteins and organelles by forming autophagosomes that engulf portions of cytoplasm. Autophagosomes ultimately fuse with lysosomes, where their contents are degraded. Autophagy regulates the levels of intracytoplasmic aggregate-prone proteins that cause neurodegenerative diseases, including HD. Autophagy upregulation may attenuate diseases like HD, and possibly tuberculosis. Autophagy inhibition slows growth of existing tumors, and may also contribute to pathology in various neurodegenerative diseases. I aim to: Discover novel autophagy-modulating drugs/pathways and test their clinical relevance in models of neurodegenerative diseases, tuberculosis and cancer. Test if there are beneficial/deleterious effects of constitutive autophagy upregulation in vertebrates. Develop methods to infer autophagic flux in vivo. Understand how autophagy compromise causes pathology. Identify novel autophagy-regulating mechanisms and investigate possible disease relevance. These studies will help the understanding of the relationship between autophagy, normal physiology and disease, and will provide proof-of-principle for autophagy-modulating strategies as therapies for a range of conditions.

Types:

Fellowships

Member States:

United Kingdom

Diseases:

Neurodegenerative disease in general

Years:

2016

Database Categories:

N/A

Database Tags:

N/A