

Defining the role of retromer in endosomal sorting in health and disease.

<https://www.neurodegenerationresearch.eu/survey/defining-the-role-of-retromer-in-endosomal-sorting-in-health-and-disease/>

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Funder

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United Kingdom

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The project/programme is most relevant to:

Neurodegenerative disease in general

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Research Abstract

Cells are composed of an outer boundary that is defined by a complex mixture of protein and

lipids called the plasma membrane. This encircles a fluid filled 3-dimensional space, termed the cytosol, which contains additional membrane-encircled compartments each composed of a unique combination of proteins and lipids. For cells to function normally, proteins and lipids must be efficiently transported to the correct membrane-enriched compartment within this maze of membranes. Not surprisingly, if such transport is perturbed, so that the wrong proteins and lipids are delivered to the incorrect membrane-enriched compartment, cell function can be adversely affected which in turn leads to the development of various human diseases. Establishing the mechanisms through which cells achieve regulated protein and lipid transport is therefore a major challenge in cell biology with direct implication for our understanding of human disease. In the present proposal, we will explore the role of a protein complex called retromer in the control of protein transport within a specific aspect of the cells membraneous maze termed the endocytic network. In particular, we will define the emerging role of retromer in neuroprotection and how deregulation of this complex leads to neurodegenerative disease including Parkinson's disease.

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