

Role and mechanisms of alpha-synuclein spreading in Parkinson's disease

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Funder

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Country

Portugal

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Role and mechanisms of alpha-synuclein spreading in Parkinson's disease

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FCT

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The project/programme is most relevant to:

Parkinson's disease & PD-related disorders

Keywords

Research Abstract

Parkinson's disease (PD) is characterized by the occurrence of misfolded protein aggregates and inclusions of alpha-synuclein (α -syn). Recent advances suggest that α -syn spreading and impairments in autophagic clearance have crucial roles in the progression of the disease. In this proposal, we hypothesize that autophagy and exosome formation intersect in a common

pathway, ultimately promoting accumulation and spreading of α -syn. To investigate this hypothesis, we will use PD patient-derived induced pluripotent stem cells (iPSCs) that will allow the establishment of in vitro protein spreading assays. This approach will be complemented by in vivo experiments to disclose how autophagy and secretion are involved in α -syn and aggregate spreading. Finally, we will test whether a pharmacological intervention will be effective in reverting this process.

This project is expected to bring new insights into the process of protein and aggregate spreading in PD and to identify new targets for therapeutic intervention.

Types:

Fellowships

Member States:

Portugal

Diseases:

Parkinson's disease & PD-related disorders

Years:

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