Modelling multi-factorial neurodegeneration in Parkinson's disease: removing roadblocks towards the clinic

https://neurodegenerationresearch.eu/survey/modelling-multi-factorial-neurodegeneration-in-parkinson%c2%92s-disease-removing-roadblocks-towards-the-clinic/

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Country

France

Title of project or programme

Modelling multi-factorial neurodegeneration in Parkinson's disease: removing roadblocks towards the clinic

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ANR

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€ 559,874

Start date of award

01/12/2012

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4.0

The project/programme is most relevant to:

Parkinson's disease|Neurodegenerative disease in general

Keywords
Research Abstract
Modelling multi-factorial neurodegeneration in Parkinson's disease:
To date, NO mammalian model recapitulates the required age-dependent parkinsonian

degeneration, the a-synuclein-inclusion pathology, the PD pathophysiology as well as the broad range of motor and non-motor parkinsonian symptoms. This absence prevents the development of neuroprotective and neurorestorative therapeutic strategies, constituting a fatal roadblock for both academia and industry in translating research into clinically-relevant discoveries.

Modelling for derisking the translation

Epidemiological and clinical evidences strongly suggest that PD results from a multifactorial etiology involving both genetic susceptibility factors and environmental exposures superimposing upon aging, the major risk factor for PD. Such multifactorial nature of the degenerative causes and processes has been overlooked so far, explaining the failure in truly replicating PD in mammals.

Combining risk-factors

We here propose four categories of mechanisms that we will combine into an integrated framework: (i) the role of aging, (ii) the role of the lysosomal dysfunction(s), (iii) the role of a-synuclein acting in a potential prion-like manner and, of paramount importance, (iv) the greater susceptibility of primate dopamine neurons versus rodent dopamine neurons for PD degeneration.

Lay Summary
Further information available at:

Types:
Investments > €500k

Member States:
France

Diseases:
Neurodegenerative disease in general, Parkinson's disease & PD-related disorders

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2016

Database Categories:
N/A

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