

Neuroprotection and immunomodulation in the enteric nervous system for the treatment of Parkinson's disease

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Canada

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Neuroprotection and immunomodulation in the enteric nervous system for the treatment of Parkinson's disease

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5

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Research Abstract

Most patients with Parkinson's disease (PD) experience autonomic dysfunctions involving the gastrointestinal system, which complicates the clinical management of the disease and lowers the quality of life. Interestingly, these gastrointestinal dysfunctions often precedes motor dysfunctions and are associated with the degeneration of the myenteric nervous system. The presence of Lewy bodies (LB) has been described in the whole myenteric and submucosal plexi

in PD patients, supporting the hypothesis that PD could start in the gut and subsequently spread out to the brainstem. Therefore, considering the potential role of environmental toxins capable of inducing the degeneration of dopamine (DA) neurons such as pathogens, and taking into account the high exposure of myenteric DA neurons to these pathogens, it is crucial to gather more data about this peripheral degeneration, which might be the missing key to understand both the etiology and progression of PD. In this research project, we will study the contribution of the immune response in the degeneration of the enteric nervous system. Moreover, we will also test new immunomodulating approaches involving estrogens to promote the neuroprotection of enteric neurons and we will validate these new molecular targets in colonic biopsies from PD patients. We anticipate that this research project will generate critical data on the role of inflammation in periphery in PD and will lead to the discovery of crucially needed biomarkers at early stages of the disease. Moreover, we expect to validate new therapeutic targets that could help limit the progression of the disease before the apparition of motor dysfunctions in patients, i.e. long before the degeneration of DA neurons in the brain.

Further information available at:

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Investments < €500k

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Canada

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