Biology and pathobiology of alpha-synuclein

https://neurodegenerationresearch.eu/survey/biology-and-pathobiology-of-alpha-synuclein/

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Country

Canada

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Biology and pathobiology of alpha-synuclein

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CIHR

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Research Abstract

Alpha-Synuclein (alpha-syn) is a major protein in neurons that is implicated in Parkinson disease (PD). We have identified high molecular weight protein complexes that contain alpha-syn in rodents and human brains and have identified some components of these complexes. Because these complexes represent an important link to the pathological alpha-syn aggregates that build up in PD brains, it is essential that we investigate the intermediary biochemical changes that cause them to become impaired and dysfunctional. Recent studies also implicate the transfer of misfolded alpha-syn from one neuron to another as a major culprit in the spread of PD pathology such as Lewy bodies. It is possible that oxidative stress and dysfunctional protein breakdown pathways alter the balance of alpha-syn binding partners causing premature disassembly or accumulation of aberrant and toxic complexes, which can then be transferred to adjacent neurons and propagate the neurotoxicity. Therefore we will develop a novel system to

measure the neuron-to-neuron movement of alpha-syn and also test whether aggregated alpha-syn can be used to seed pathology in otherwise healthy tissue.

Further information available at:

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