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Neuroprotective effect of a new peptide against neurodegeneration induced in the murine model of Parkinson's disease

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Parkinson's disease (PD) is the most common neurodegenerative disease related to movement, and affects 1% of the population over 60 years old. Chronic use of dopamine precursors causes strong side-effects, and the drugs used in the treatment does not modify disease progression. Therefore, the development of more effective anti-parkinsonian drugs is necessary. Wasp venoms are composed by a cocktail of bioactive molecules, with a high selectivity to CNS. Then, the objective was tested a new peptide (neurovespina) with neuroprotective activity, similar to one found in a social wasp venom Polybia occidentalis, in a model of PD. Study procedures were approved by CEUA-UnB. Swiss mice (Mus musculus) received unilateral intrastriatal injections of 40 μg of 6-OHDA, a neurotoxin, in 4 μl of saline solution, resulting in SN lesioning. Neurovespina fraction (7 mg/kg) was injected (i.p) 24 h, 48 h and 72 h after 6-OHDA lesioning. The animals had their parkinsonian profile evaluated in a series of behavioral tests for a period of 22 days. Lesion evaluation was performed in contralateral rotations induced by apomorphine test and the number of the viable neurons was counted in fluorescence microscope. Treated group showed a decrease on the number of rotations in relation to the damaged group ($p<0.001$). Moreover, the peptide decreased the degeneration in the SN. This study revealed a promising peptide that was able to prevent the progression of the neuronal loss in a model of PD.

Biography

Márcia Renata Mortari has completed her PhD and Post-doctorate from University of Sao Paulo, School of Psychobiology. She is the Commander of the Department of Physiology and Coordinator of Neuropharmacology laboratory. She has published more than 39 papers in reputed journals, has over 50 abstracts presented at scientific meetings and has four patents.

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