

Maackiain Attenuates Alpha-Synuclein Accumulation and Improves 6-OHDA-Induced Dopaminergic Neuron Degeneration in Parkinson's Disease Animal Model

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Abstract : Parkinson's disease (PD) is a degenerative disorder of the central nervous system that is characterized by progressive loss of dopaminergic neurons in the substantia nigra pars compacta and motor impairment. Aggregation of α -synuclein in neuronal cells plays a key role in this disease. At present, therapeutics for PD provides moderate symptomatic benefit but is not able to delay the development of this disease. Current efforts for the treatment of PD are to identify new drugs that show slow or arrest progressive course of PD by interfering with a disease-specific pathogenetic process in PD patients. Maackiain is a bioactive compound isolated from the roots of the Chinese herb *Sophora flavescens*. The purpose of the present study was to assess the potential for maackiain to ameliorate PD in *Caenorhabditis elegans* models. Our data reveal that maackiain prevents α -synuclein accumulation in the transgenic *Caenorhabditis elegans* model and also improves dopaminergic neuron degeneration, food-sensing behavior, and life-span in 6-hydroxydopamine-induced *Caenorhabditis elegans* model, thus indicating its potential as a candidate antiparkinsonian drug.

Keywords : maackiain, Parkinson's disease, dopaminergic neurons, α -Synuclein

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