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### **Oxymatrin, a potential anti-Parkinsonian phytochemical in transgenic and pharmacological *Caenorhabditis elegans* models of Parkinson's disease**

(O)Ru-Huei Fu<sup>1,2</sup>, Shih-Ping Liu<sup>1,3</sup>, Ya-Hsien Lin<sup>1</sup>, Yu-Chen Ho<sup>1</sup>, Chia-Hui Lu<sup>1</sup>, Jing-Rong Wei<sup>1</sup>, Zih-Wan Wang<sup>1</sup>, Woei-Cherng Shyu<sup>1,2</sup>, Shinn-Zong Lin<sup>1,2,4</sup>

<sup>1</sup> Graduate Institute of Immunology, China Medical University, Taichung, Taiwan, <sup>2</sup>Center for Neuropsychiatry, China Medical University Hospital, Taichung, Taiwan, <sup>3</sup>Graduate Institute of Basic Medical Science, China Medical University, Taichung, Taiwan, <sup>4</sup>China Medical University Beigang Hospital, Yunlin, Taiwan

Parkinson's disease (PD) is the second most common neurodegenerative disease and impairs motor and cognitive function of patients. There are two pathological symptoms in PD patient: formation of Lewy bodies (aggregation of  $\alpha$ -synuclein) in brains and selective death of dopaminergic neurons (DA). To date, the disease has yet no effective therapies. Oxymatrin (OMT) is the major alkaloid component derived from *Sophora Flavescens* Ait., a traditional Chinese medical herb. It has been demonstrated to have neuroprotective properties, but, up to now, no studies have described the effects of OMT on PD. The aim of this study was to evaluate the potential for OMT to improve PD. The current study used the model of *Caenorhabditis elegans* to assess the anti-PD effects of OMT. A pharmacological strain BZ555 expressing green fluorescent protein (GFP) in the DA and a transgenic strain OW13 expressing human  $\alpha$ -synuclein in the muscle cells were utilized for the study OMT for its neuroprotective and cognition strengthening effects. Our studies demonstrate that OMT decreases  $\alpha$ -synuclein aggregation, prevents DA degeneration and recovers the lipid content in worms, thus showing its potential as a possible anti-PD drug. These results promote additional investigations on phytochemicals, as possible therapeutic reagent against PD.