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Neuroprotective effects of *Paecilomyces hepiali* mycelium extract in *Drosophila* models of Huntington's disease

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As the world aging rapidly, neurodegenerative diseases became one of the most serious age-related health problems. In south Asia, several medical foods have been used as an anti-aging remedy since ancient times. Cordyceps (*Paecilomyces hepiali* mycelium), a traditional tonic, has been reported with various pharmacological activities. In this study, we utilized *Drosophila* model system mimicking Huntington's disease (HD) to exam the neuroprotective effects of the ethanol extraction of *P. hepiali* mycelium (PHE). These HD flies are expressing motor dysfunction and early death. Results demonstrated that diet containing 1 mg/mL PHE could significantly prolong the mean lifespan up to 31% of flies compared to the control diet. It was also found that PHE could improve the locomotor activity of flies at the young age (4 days). Besides, oxidative stress plays a causal role in the neurodegenerative process. PHE exhibit anti-oxidative properties in a concentration-dependent manner by using the DPPH radical scavenging and ferric ions reducing power assay. These results indicated that supplementation with PHE improved movement performance and longevity might contribute by its neuroprotective antioxidants. We suggest that the PHE can be developed as a potential dietary supplement against neurodegenerative diseases such as HD.

Biography

Ting-Yi Chien is an Assistant Professor of Food Science, Nutrition, and Nutraceutical Biotechnology at Shih Chien University, Taiwan. His research field includes food analysis and bioassay with special focus on anti-cancer, anti-inflammatory, and analgesic effects by phytochemicals from food. Recently, he is developing the anti-aging model to elucidate the protective effects of medical food on degenerative diseases such as osteoarthritis, sarcopenia and neurodegeneration.

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