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168 | Geraniol delays age-related locomotion decline in *C. elegans* Parkinson's disease models

Disorders of the Nervous System

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Due to the increase in life expectancy worldwide, age-related disorders such as neurodegenerative diseases (NDs) have become more prevalent. Elevated levels of oxidative stress could modulate the progression of NDs. For example, in Parkinson's Disease (PD) it has been shown that compromising the capacity to scavenge free radicals can exacerbate α -synuclein (α -syn) aggregation and proteotoxic damage. Geraniol (GL), a plant-derived essential oil, has recognized antioxidant properties. Considering that oxidative stress contributes to proteotoxic disease progression, compounds with antioxidant activity have been postulated as potential therapeutic agents. *C. elegans* is widely used in biomedical research. There is a high level of homology between *C. elegans* and mammalian genes (including proteins involved in cytoprotective mechanisms). In fact, several NDs can be recapitulated in this animal. In this work, we use *C. elegans* PD models to evaluate the *in vivo* effects of GL. We found that GL delays age-related locomotion decline in PD worms. Interestingly, GL also decreases α -syn aggregation. These preliminary results indicate a potential antiproteotoxic effect in *C. elegans* models of PD. Therefore, we propose, to combine genetic, microscopy and behavioral techniques to unravel GL effect in *C. elegans* ND models. These studies could provide a proof of concept of the potential of GL as a promising compound to retard proteotoxic diseases.