The Use of Curcumin to Mitigate the Inclusion of ALPHA-synuclein in Transgenic Caenorhabditis elegans

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Aggregation of the protein alpha-synuclein causes symptoms of Parkinson's Disease in human brains. Treatment of transgenic NL5901 C. elegans with the xenohormetic phytochemical curcumin was administered to decrease the aggregation of a-synuclein and maintain the proteostasis of the nematode. NGM agar plates with and without 20um curcumin were seeded with OP50 E. coli, and worms were then transferred onto the plates and allowed to grow to adulthood. Viewing of YFP-tagged alpha-synuclein occurred via Carl Zeiss Axiovert 40 CFL fluorescence microscope at 514 nm, and images were analyzed for fluorescence intensity via ImageJ software. Fluorescence intensity of treated worms was observed to be significantly ($p<0.05$) lower than untreated worms, suggesting that curcumin has the ability to decrease alpha synuclein aggregation in aging animals.

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