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Toxicological Effects of Fullerenes on *Caenorhabditis elegans*[1]
JUSTIN SCHOMAKER, RENEE SNOOK, CARINA HOWELL, Lock Haven University — The nematode species *Caenorhabditis elegans* is a useful genetic model organism due to its simplicity and the substantial molecular, genetic, and developmental knowledge about the species. In this study, this species was used to test the toxicological effects of C60 fullerene nanoparticles. In previous studies using rats, a solution of C60 fullerenes in olive oil proved to extend the life of the subjects. The purpose of this experiment was to subject *C. elegans* to varying concentrations of C60 fullerenes and observe their toxicological effects. Initial findings indicate a link between fullerene exposure and enlargement of the vulva as well as the formation of a small nodule at the base of the tail in some individuals. While the fullerenes are not lethally toxic in C. elegans, results will be presented that pertain to changes in life span and progeny of the nematodes exposed to varying concentrations of fullerenes as well as the mechanisms of toxicity. High magnification imaging via SEM and/or AFM will be used to characterize the fullerene nanoparticles. Testing the toxicity of fullerenes in a wide variety of organisms will lead to a more complete understanding of the effects of fullerenes on living organisms to ultimately understand their effects in humans.

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