

Screening for Flavonoids that Induce Growth Retardation of Soil Nematode, *Caenorhabditis elegans*

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Abstract

Flavonoids have antioxidant, anti-inflammatory, and anti-tumor properties but detailed function is not known yet. We screened for flavonoids that are responsible for inducing growth retardation of *C. elegans* to understand multitrophic interactions between soil nematodes and flavonoid-producing plants. Due to its simplicity, powerful genetics and complete genome sequence, *C. elegans* is an ideal model system to investigate the molecular link between these two systems. We examined several flavonoids including acacetin, apigenin, chrysin, daidzein, 5, 4-dihydroxyflavone, genkwanine, kaemferol, luteolin, naringenin, and quercetin by feeding to *C. elegans*. Apigenin showed growth inhibition when it was treated at L1 stage and induced reduction in brood size when treated at L4 stage. At 48 h incubation after hatching only 20% of apigenin treated P0 worms reached L4 stage. Effects of apigenin became more severe in F1 generation and showed the larval arrest. Apigenin appears to act as a stressor to *C. elegans* and its molecular mechanism is currently investigated.

References

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