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BIOACTIVE CONSTITUENTS FROM THE ETHYL ACETATE EXTRACT OF THE FRUITS *Garcinia cambogia*

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Garcinia cambogia of the family Clusiaceae is a moderate-sized multipurpose tree. It has been used in Sri Lanka from time immemorial for culinary and medicinal purposes. *Garciniacambogia* is becoming a popular species in the world because of its potential as a dietary supplement for weight loss and appetite control. The objective of the current study was to identify the bioactivity of the ethyl acetate extract and to isolate the bioactive constituents. Fresh fruits of *Garcinia cambogia* were extracted with hexane, ethyl acetate (EtOAc) and methanol (MeOH). Each extract was subjected to the assay for antioxidant activity against DPPH radicals, phytotoxic activity against *Lactuca sativa* seed germination, cytotoxic activity against brine shrimp lethality, antifungal activity against *Cladosporium cladosporioides* (TLC –bio autographic method) and α -amylase enzyme inhibition assay.

Results from the antioxidant activity assay, EtOAc extract showed IC₅₀ at 88 ppm which indicated moderate antioxidant activity when compared to the standards (ascorbic acid IC₅₀ at 6.5 ppm). The EtOAc extract showed 100% root inhibition at 500 ppm and 1000 ppm respectively. EtOAc extract showed LD₅₀ at 200 ppm for brine shrimp lethality assay (artificial sea water was used as the positive control). The α -amylase enzyme inhibition of the EtOAc was IC₅₀ at 1100 ppm (acarbose used as the positive control). EtOAc extract did not show antifungal activity against *C. cladosporioides*. Chromatographic separation of the ethyl acetate extract furnished six pure compounds. Four of these compounds were identified as garcinol, 7-epi-garcinol, guttiferone I and guttiferone J by comparison of 1H and 13C-NMR spectral data with those reported in the literature. Garcinol, (IC₅₀ -6 ppm, ascorbic acid IC₅₀ 6.5 ppm), 7-epigarcinol (IC₅₀ 4.4 ppm) and guttiferone I (IC₅₀ 25 ppm) showed potent antioxidant activity and only garcinol showed potent brine shrimp lethality (LD₅₀ at 5 ppm). Guttiferone J showed 100% root inhibition of *L. sativa* at 125ppm.