

**Secondary metabolites produced by an endophytic fungus,
Neofusicoccum parvum from the fruits of *Elaeocarpus serratus***

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Natural products from microorganisms play a major role in agriculture, medicine, pharmaceutical, and food industry due to their bioactivity. In a continuation of our studies on chemistry and bioactivity of fungi associated with edible fruits of Sri Lanka, the secondary metabolites produced by endophytic fungus *Neofusicoccum parvum* isolated from *Elaeocarpus serratus* (Ceylon Olive) of the family Elaeocarpaceae were studied. Pure cultures of *N. parvum* were grown in potato dextrose broth for three weeks. The fungal medium and the mycelium were extracted with EtOAc. Based on the TLC analysis, both EtOAc extracts were combined and screened for antioxidant activity against DPPH radical, phytotoxicity against *Lactuca sativa* seed germination, antifungal activity against *Cladosporium cladosporioides* and α -amylase enzyme inhibitory activity. The EtOAc extract showed positive response for antifungal, antioxidant, phytotoxic and low α -amylase enzyme inhibitory activity. The extract was chromatographed over silica gel, Sephadex LH-20 and PTLC, to furnish a total of nine compounds. The structures of these compounds were determined as (-)-7-hydroxymellein, (-)-*cis*-4-hydroxymellein, (-)-*trans*-4-hydroxymellein, (-)-5-hydroxymellein, (6*R*,7*S*)-dia-asperlin, (-)-mellein, 4,7-dihydroxymellein, CJ-1444515 and 13,14,15,16-tetranorlabd-7-ene-19,6 β :12,17-diolide by detail analysis of NMR and MS spectral data and comparison with reported data. Some of these compounds showed high antifungal activity against *C. cladosporioides* on TLC bioautography method. This is the first report of the isolation of endophytic fungi from *E. serratus*. The *N. parvum* strain isolated in the present study was found to be a rich source of mellein type compounds which may function as phytotoxins.

Keywords: bioactive metabolites; endophytic fungi, *Neofusicoccum parvum*