

**PHYTOTOXIC COMPOUNDS FROM AN ENDOPHYTIC FUNGUS RESIDING IN
*Vernonia cinerea***

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Fungi are eukaryotic living organisms that produce a large number of novel secondary metabolites. Endophytic fungi residing in internal plant tissues, resulting from the recombination of host plant genes, can produce the same vital and rare bioactive compounds produced by the host plant. The objective of this study was to isolate compounds produced by endophytic fungi associated with *Vernonia cinerea* (Syn. *Cyanthillium cinereum*), which is a small herb belonging to the family Asteraceae known to produce many bioactive compounds. *Vernonia cinerea* was collected from Hanthana (7.2681 °N, 80.6355 °E). An endophytic fungus isolated from triple sterilized leaf segments (5 × 5 mm) of *V. cinerea* was cultured in 90 flasks containing 400 mL of potato dextrose broth medium. Flasks were shaken continuously on a laboratory shaker after ten days of inoculation until extraction. After three weeks of incubation, the broth was filtered. Freshly filtered broth (5 mL for each plant) was sprayed on two-week-old cucumber seedlings (*Cucumis sativus*). Observations were taken daily for five days. Necrotic symptoms were observed on the leaves after 24 h, and some plants died after three days. Rest was extracted with EtOAc. Lettuce seed germination bioassay for phytotoxicity evaluation was performed in triplicates. After five days of incubation at room temperature at dark conditions, root and shoot length were measured. The EtOAc extract showed 82% and 64% inhibition of root and shoot growth, respectively, in the assay at 1000 ppm. Abscisic acid was used as a positive control. The EtOAc extract was subjected to chromatographic separation over silica gel, Sephadex LH-20, PTLC and HPLC to furnish five known compounds, 2-hydroxy-6-methyl benzoic acid, its (1*S*,5*R*,6*R*)- and (1*R*,5*R*,6*R*)-5,6-dihydroxy-3-(hydroxymethyl)-2-oxo-3-cyclohexene-1-yl esters, epoxydon and a 2,4-pyrrolidinedione derivative, PF1052. Determination of phytotoxic compounds and identification of endophytic fungus is in progress.

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