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## Secondary Metabolites with Radical Scavenging Activity from *Daldinia Eschscholzii*, Isolated from The Lichen *Parmotrema* Sp. In Sri Lanka- Isolation and Structure Determination

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Natural products are promising leads for novel therapeutic agents. Isolation and characterization of bioactive compounds in search for potential pharmacophores has acquired a developing interest in on-going research. Although Endolichenic fungi (EF) are a rich source of bioactive secondary metabolites, they still remain almost unexploited. The present study is focused on isolation and structure elucidation of compounds with radical scavenging activity from the EF, *Daldinia eschscholzii* that occur in the lichen *Parmotrema* sp. in Hakgala Botanical Garden, Sri Lanka. *Daldinia eschscholzii* cultivated on 48 large petri dishes with PDA were incubated at room temperature for one week. Mycelia were cut in to small pieces along with the medium and extracted with ethyl acetate twice. The radical scavenging activity of the crude extract was evaluated using DPPH assay. Standard antioxidant, Butylated Hydroxy Toluene (BHT) and MeOH were used as the positive control ( $IC_{50} = 38.2 \pm 4.0 \mu\text{g/ mL}$ ) and negative control respectively. The crude extract with high radical scavenging activity ( $IC_{50} = 77.9 \pm 5.1 \mu\text{g/ mL}$ ), was partitioned with hexane, chloroform and aqueous methanol. All three organic extracts were then subjected to DPPH assay. Chloroform fraction with the highest activity ( $IC_{50} = 63.8 \pm 4.8 \mu\text{g/ mL}$ ) was further fractionated using silica gel, sephadex column chromatography and preparative TLC to isolate two pure compounds. The structures of the compounds were elucidated using  $^1\text{H}$ ,  $^{13}\text{C}$ , 2D NMR and MS data. The compounds were identified as 7-hydroxy-2-methylchroman-4-one (1) and 5-methoxynaphthalen-1-ol (2). Compound 1 showed no activity in the assay. Compound 2 showed higher activity than the standard BHT, with  $IC_{50}$  value of  $10.2 \pm 5.8 \mu\text{g/ mL}$ .

**Keywords:** *Daldinia eschscholzii*, endolichenic fungi, radical scavenging activity, secondary metabolites, DPPH assay

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