

**BIOACTIVE EXTRACTS FROM ENDOPHYTIC FUNGI ASSOCIATED WITH
POPULAR ANTIDIABETIC MEDICINAL PLANT *Coccinia grandis***

B.M.S. Nilmini, N.S. Kumar, N.K.B. Adikaram and L. Jayasinghe*

National Institute of Fundamental Studies, Kandy, Sri Lanka

**ulbj2003@yahoo.com*

Endophytic fungi are an important source of renewable and environmentally friendly novel bioactive compounds. Hence, the present study was undertaken to investigate the chemistry and bioactivities of secondary metabolites of endophytic fungi from *Coccinia grandis* which is well known to possess anti-diabetic activity. The surface treated leaf segments (5×5 mm) were placed on potato dextrose agar (PDA) and two types of endophytic fungi (fungus SB/CG/A and SB/CG/B) were isolated. The pure fungal strains were cultured in Potato Dextrose Broth (PDB) medium. The completion of a 21-day period was followed by extracting the media with ethyl acetate (EtOAc) (1:1) and mycelia were extracted with EtOAc followed by methanol (MeOH). The EtOAc extracts of medium and mycelium of both fungi were separately combined. The crude extracts were screened for DPPH (2,2'-diphenyl-1-picrylhydrazyl) free radical scavenging activity, antifungal activity against *Cladosporium cladosporioides*, phytotoxic activity against Lettuce seed germination, α -amylase and α -glucosidase enzyme inhibitory activities. Compared to the positive control in each assay, both EtOAc and MeOH extracts of SB/CG/A showed high α -amylase inhibition activity (IC_{50} = 418.38 mg L⁻¹ and IC_{50} = 619.75 mg L⁻¹, respectively) while EtOAc extract of SB/CG/B showed high α -glucosidase inhibition (IC_{50} = 207.72 mg L⁻¹). For the antioxidant activity, EtOAc extract of SB/CG/B end up with IC_{50} of 621.56 mg L⁻¹. None of the extracts, except EtOAc extract of SB/CG/A showed antifungal activity. The EtOAc extract of the SB/CG/A inhibit root germination of lettuce seed while MeOH extract inhibited shoot germination. The EtOAc extract of SB/CG/B inhibit both shoot and root germination. Both EtOAc extracts were subjected to column and thin-layer chromatography (Silica gel followed by Sephadex LH-20, RP-18 open columns and PTLC) to give total of 12 compounds. Molecular identification of SB/CG/A and SB/CG/B fungi, structure elucidation of isolated compounds and screening their bioactivities are in progress.

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Keywords: *Coccinia grandis*, Endophytic fungi