Abstract No: BS-17

Screening of endophytic *Hypoxylon* sp. for *in vitro* antimicrobial and antioxidant activity

W. M. S. N. Bandara and D. A. D. A. Daranagama*

Department of Plant and Molecular Biology, Faculty of Science, University of Kelaniya, Sri Lanka
anupamad@kln.ac.lk*

Genus *Hypoxylon* is the largest and most complex genus belonging to the family Hypoxylaceae in Xylariales, Division Ascomycota. In natural product development, *Hypoxylon* sp. are widely being studied in order to identify novel bioactive agents produced during their secondary metabolism. The objective of this study was to characterize and identify the bioactive properties of secondary metabolites of endophytic *Hypoxylon nicaraguense* isolated from Pilikuththuwa low land wet zone forest, Gampaha, Sri Lanka. During the study, secondary metabolites of *H. nicaraguense* were extracted by solid state fermentation using rice medium and liquid state fermentation using Malt Yeast Peptone Broth, followed by ethyl acetate extraction. Antibacterial activity of the crude extract was tested against *Erwinia* sp., while the antifungal activity was tested against *Fusarium oxysporum*, *Colletotrichum* sp., *Phomopsis* sp. and *Lasiodiplodia theobromae* by agar well diffusion method. Testing antioxidant activity was achieved using DPPH scavenging method. Preliminary screening of chemical compounds of crude extract was performed to identify the active compounds present in each crude extract. Antimicrobial activity test exhibited significant activity against the test pathogenic bacteria *Erwinia* sp. and test pathogenic fungi *Fusarium oxysporum* and *Phomopsis* sp. The crude extract was only slightly effective in controlling the growth of *Colletotrichum* sp. and ineffective in controlling the growth of *Lasiodiplodia theobromae*. Nevertheless, the highest concentration of crude extract of *H. nicaraguense* (10 mg/mL) showed higher antioxidant activity with IC_{50} value of 66.62%. Results of preliminary screening of chemical compounds confirmed that the crude extract consists of active compounds including carbohydrates, flavonoids, phenols, triterpenoids, steroids, glycosides, tannins and proteins. The current study discloses that *H. nicaraguense* is a promising source with antimicrobial and antioxidant properties which could benefit the agriculture related industries to improve commercial antibacterial and antifungal products.

Keywords: Antimicrobial, Antioxidant, Secondary Metabolites, Hypoxylaceae