Abstract No: 205 *Natural Sciences*

A series of isocoumarins from an endophytic fungus *Biscogniauxia capnodes* from *Phyllanthus acidus*

D.M. Dissanayake[1], N.S. Kumar[1], L. Jayasinghe[1*], and Y. Fujimoto[1, 2]

[1]National Institute of Fundamental Studies, Kandy, Sri Lanka,
[2]School of Agriculture, Meiji University, Japan
[*]ulbj2003@yahoo.com

Microbial natural products play major role in applications in agriculture, medicine, cosmetics and food industry. Fungi are living eukaryotic organisms and can be categorized into epiphytic fungi and endophytic fungi. Endophytic fungi reside in internal plant tissues of higher plants whilst epiphytic fungi grow on the surface of plants. As a continuation of our studies on chemistry and bioactivity of fungi associated with edible fruits of Sri Lanka, secondary metabolites produced by an endophytic fungus isolated from popular edible *Phyllanthus acidus* fruits was studied.

Phyllanthus acidus (goose berry) is a tree of family Phyllanthaceae. An endophytic fungus *Biscogniauxia capnodes* was isolated from the fruits of *P. acidus*, and identified by molecular means. Pure cultures of *B. capnodes* were inoculated into potato dextrose broth (PDB) media, allowed to stand for a week and then incubated at room temperature for another two weeks while shaking every other day on a laboratory shaker. The culture broth and mycelium were separately extracted with EtOAc and the residual mycelium was further extracted with MeOH. According to the similar TLC analysis, the two EtOAc extracts were combined. The EtOAc and MeOH extracts were subjected to bioassays for antioxidant activity (against DPPH radical scavenging), phytotoxicity against lettuce (*Lactuca sativa*) seed germination inhibition and antifungal activity (against *Cladosporium cladosporioides*). The EtOAc extract showed positive response in antifungal, antioxidant and phytotoxicity bioassays. Chromatographic separation of EtOAc extract furnished seven compounds. These compounds were identified as six isocoumarins, 8-hydroxy-3,5-dimethylisochroman-1-one (**1**), 8-methoxy-3,5-dimethylisochroman-1-one (**2**), 7,8-dihydroxy-3,5-dimethylisochroman-1-one(**3**), 6-methoxy-8-hydroxy-3-methyl-1H-isochromen-1-one (**4**), 8-hydroxy-6,7-dimethoxy-3-methyl-1H-isochromen-1-one (**5**), 6,8-dihydroxy-7-methoxy-3-methyl-1H-isochromen-1-one (**6**), 5-methylbenzene-1,3-diol (**7**), by detail analysis of ^{1}H & ^{13}C NMR data and comparison with reported data. This is the first report of isolation of an endophytic fungus *Biscogniauxia capnodes* from the fruits of *P. acidus* as well as isolation of isocoumarins as metabolites from the fungus *B. capnodes.*

Acknowledgements: Financial support from the National Research Council Sri Lanka (Research Grant NRC 12-032) is gratefully acknowledged.