Abstract No: 549 ***Natural Sciences***

CHEMISTRY AND BIOACTIVITY OF SECONDARY METABOLITES FROM *ASPERGILLUS NIGER* ASSOCIATED WITH *MUSA SP.*

H.M.S.K.H. Bandara[1], N.S. Kumar[1], L. Jayasinghe[1]*, H. Masubuti[2] and Y. Fujimoto[2]

[1]Institute of Fundamental Studies, Kandy, Sri Lanka
[2]Department of Chemistry and Materials Science, Tokyo Institute of Technology, Japan
**ulbj2003@yahoo.com*

Fungi are among the most important groups of eukaryotic organisms that are well known for producing many novel metabolites which are directly used as drugs or function as lead structures for synthetic modifications. The objective of this study is to determine the chemistry and bioactivities of the fungus isolated from the inner part of the peel of diseased *Musa sp.* Black coloured filamentous fungus *Aspergillus niger* was isolated from the inner part of the peel of *Musa* sp by sub culturing on potato dextrose agar (PDA) medium. Pure culture of the fungus was inoculated on potato dextrose broth (PDB) medium in twenty 1L Erlenmeyer flasks and potato dextrose agar (PDA) medium in forty 15cm diameter Petri dishes. After 4 weeks PDB medium was filtered through a Buchner funnel and partitioned with *n*-hexane and ethyl acetate to give *n*-hexane extract and ethyl acetate extract. Residual mycelium was sequentially extracted into ethyl acetate and methanol using sonicator. PDA medium was sequentially extracted into ethyl acetate and methanol. All these extracts were subjected to bioassays, antifungal activity against *Cladosporium cladosporioides* by TLC bioautography method; antioxidant activity against DPPH radical using TLC bioautography method; brine shrimp toxicity against *Artemia salina* and phytotoxicity against *Lactuca sativa*. Significant phytotoxicity and brine shrimp toxicity was observed in three ethyl acetate extracts obtained from both PDA and PDB medium. TLC analysis indicated the presence of same compounds in the three ethyl acetate extracts. Hence, EtOAc extracts were combined and subjected to a combination of chromatography over silica gel (*n*-hexane-EtOAc-MeOH), Sephadex LH-20 (MeOH), reverse phase silica gel (RP) and RP- HPLC (H_2O-MeOH) to give alkaloids aspernigrin A and its *N*-(2-hydroxyethyl) derivative (pestalamide C), naphtho-γ-pyrones flavasperone, fonsecinone A, aurasperone A, and a cephem derivative. This is the first report of natural cephem derivative with a vinyl moiety. Out of these compounds foncesinone A and aurasperone A were found to be highly toxic to brine shrimp and pestalamide C was moderately toxic. None of the compounds exhibit significant activity against phytotoxic, antifungal and antioxidant bioassays.