CHEMISTRY AND BIOACTIVITY OF THE SECONDARY METABOLITES ISOLATED FROM THE SEEDS OF *POUTERIA CAMPECHIANA* AND ASSOCIATED ENDOPHYTIC FUNGI

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Pouteria campechiana (sinh. Lavulu) is a edible fruit (family Sapotaceae) native to Central America and growing in tropical countries. The ethyl acetate (EtOAc), methanol (MeOH) and *n*-butanol (*n*-BuOH) extracts prepared from the seeds of the fruits of *P*. *campechiana* were subjected to bioassays. Preliminary investigations indicated that the EtOAc extract of seeds was active in antifungal, antioxidant, phytotoxic and cytotoxic bioassays. The *n*-BuOH extract of seeds also showed significant positive responses for antioxidant and cytotoxic bioassays. Chromatographic separation of the EtOAc and *n*-BuOH extracts with silica gel, Sephadex LH-20 (MeOH/CHCl₃) column chromatography and preparative thin layer chromatography furnished five compounds identified as Taxifolin (116), Gallocatechin (117), Quercetin (118), 4hydroxyacetophenone (119) and a glycerol ester of an unsaturated fatty acid (120).

The endophyte *Talaromyces purpurogenus (syn. Penicillium purpurogenum)* (family Trichocomaceae) was isolated from the seeds of *P. campechiana*. A pure culture of fungus in PDA was inoculated in potato dextrose broth in large scale (20-1 L conical flasks) and allowed to grow for 4 weeks. The EtOAc extract of the filtrate from the fungus, and the EtOAc and MeOH from the fungal residue were subjected to bioassays. All three extracts from the endophyte (EtOAc filtrate, EtOAc residue and MeOH residue) were found to be antioxidant and phytotoxic while only EtOAc extracts were toxic to brine shrimps. The EtOAc extracts of *T. purpurogenus* were chromatographed sequentially over silica gel, Sephadex LH-20 and preparative thin layer chromatography to furnish four compounds identified as 4-Hydroxyacetophenone (**119**), Tyrosol (**121**), Taloroconvolutin A (**122**) and a new secondary metabolite, furanone analogue of Taloroconvolutin A (**123**).

Compound **120** was found to be antifungal against *C. cladosporioides* while compounds **116**, **117**, **118** and **119** were found to be antioxidant (IC₅₀ values 510 ppm, 180 ppm, 300 ppm and 405 ppm respectively). Compounds **120** and **122** were significantly active against brine shrimps with LD₅₀ values less than 200 ppm and compound **119** was moderately active (LD₅₀ of 1000 ppm). Compound **120** was strongly phytotoxic showing 100% inhibition at 800 ppm while compound **119** was moderately active showing 75% inhibition at 1000 ppm. It was of interest that compound **119** was isolated from seeds of *P.campechiana* and its endophytic fungus.

