

OR-8**Chemical Constituents and Bioactivities of *Garcinia Prainiana***Shamsul On¹, Farediah Ahmad¹, Hasnah Mohd Sirat¹ and Muhammad Taher²¹Department of Chemistry, Faculty of Science, Universiti Teknologi Malaysia, 81310 Skudai, Johor, Malaysia;²Kulliyah of Pharmacy, International Islamic University Malaysia, 25200 Kuantan, Pahang, Malaysia

Garcinia is the largest genus in Guttiferae family found in tropics as trees and shrubs. This genus is a rich source of phenolic compounds comprised of xanthenes, biflavanoids and benzophenones. It also has been shown to have bioactivities such as antioxidative, antimicrobial, anti-inflammatory, cytotoxic and anti-HIV. In this study, the phytochemical investigation of the leaves and stem barks of *G. prainiana* and bioactivities of crude extracts and isolated compounds were carried out. The leaves and stem barks of *G. prainiana* collected from Kuantan, Pahang were extracted by soxhlet extractor with hexane, dichloromethane and methanol. The crude extracts were purified by column chromatography to yield pure compounds which were characterized spectroscopically using IR, NMR (1D and 2D), UV and MS. Fractionation and purification of the hexane extract of leaves yielded squalene, friedelin, 3 β -hydroxyeupha-5,22-diene and 3 β -acetoxyeupha-5,22-diene. The methanol extract of the stem barks afforded biflavanoids characterized as morelloflavone, *O*-methylfukugetin, amentoflavone, 4''-methyl-amentoflavone and volkensiflavone. The total phenolic content studies were carried out on the crude extracts by using Folin-Ciocalteu reagent. The methanol extract of leaves and stem barks showed the highest total phenolic content expressed as gallic acid and (\pm)-catechin equivalents. These extracts also showed the highest value of ascorbic acid and butylated hydroxytoluene (BHT) equivalents on forming the phosphomolybdenum complex in the total antioxidant assay. The antioxidant assay on 2,2-diphenyl-1-picrylhydrazyl (DPPH) radical showed that the methanol extract of stem barks had the highest free radical scavenging activity with IC₅₀ value 74.5 μ g/mL while the isolated compound, morelloflavone revealed a strong free radical scavenging activity with IC₅₀ value 15.7 μ g/mL. The antibacterial assay was done by disc diffusion method, followed by minimum inhibition concentration (MIC) and minimum bactericidal concentration (MBC) determinations. The crude methanol extract of stem bark displayed moderate antibacterial activity against Gram-negative bacteria *Pseudomonas putida*, *Escherichia coli*, *Pseudomonas aeruginosa* and Gram-positive bacteria *Bacillus subtilis* while the isolated compound, morelloflavone also showed moderate antibacterial activity against *Pseudomonas putida* and *Pseudomonas aeruginosa* with MIC value 900 μ g/L. The cytotoxic activities of the isolated compounds were evaluated using the MTT assay against H1299 and A549 lung cancer cells. The results showed that squalene had strong cytotoxicity against H1299 and A549 cancer cells with IC₅₀ value 23.0 μ g/mL and 74.0 μ g/mL respectively, while the other compounds were inactive against the tested cell lines.
