DETERMINATION OF ANTIMICROBIALLY AND ANTIOXIDATIVE EXTRACT FROM THE ROOT OF *Leea indica* (MEMALI)

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ABSTRACT

Leea indica (Memali) is a well known medicinal plant with its therapeutical and medicinal properties especially on antimicrobially and antioxidant activities. The antimicrobial activity and its antioxidative were investigated on the root of *L.indica* by preparing three extracts that have been extracted consecutively with petroleum ether (P.E), dichloromethane (DCM), and methanol (MeOH). The percent of yield obtained for P.E crude extract, DCM crude extract and MeOH crude extract were 0.412%, 0.456% and 10.052% respectively. Phytochemical screening test was conducted with methanolic extract and found to have positive results on saponin, tannins, flavanoids, cardiac glycoside and terpenoids but negative results on alkaloid. Methanolic extract was analysed using Spectrum 100 Spectrometer and a broad range peak at 3325cm^{-1}, 1639.66cm^{-1}, 1235.63cm^{-1} and 1014.10cm^{-1} were obtained for alcohol group, carbonyl peak, C-O peak and C-N stretch peak respectively. The crude extracts were developed using TLC and have separation ratio for P.E extract, DCM extract and MeOH extract at P.E: DCM (40:60), DCM (100) and Chloroform:MeOH (50:50) respectively. 7 compound separated on P.E extract, DCM with 12 compound and MeOH with 3 compounds only. Each of the crude extract then tested with disc diffusion method to observe the antibacterial activity by preparing 50mg/mL, 100mg/mL, 200mg/mL and 400mg/mL extract with serial dilution. DCM extract was found to be the most active extract that contained bioactive compound with inhibition zone of 9.67mm at 400mg/mL using *S.epidermidis*. While MeOH has moderately active inhibition zone towards *S.aureus* with diameter of 8.33 at 50mg/mL extract. Only DCM extract tested using *S.epidermidis* followed the concentration dependent manner while the rest were concentration independent manner. The bioactive compounds were determined in the crude extracts and found to be range at D6-D12 for DCM extract and M3 for MeOH extract. Most of the bioactive compound in DCM extracts were terpenoids and aromatic compounds. The antioxidant activity was determined using 0.6% of 2,2-diphenyl-1-picrylhydrazyl (DPPH) and found to be strongest at MeOH extracts. Each of the crude extracts were prepared in 6 serial dilution concentrations for semi-quantitative DPPH staining dot blot assay at 400mg/mL until 6.25 mg/mL to observe the radical scavenging activity on the amount of white spot intensity. MeOH extract was observed to have the strongest intensity of white spot compared to DCM extract. Thus, it can be concluded that terpenoids and phenolic compounds were responsible for the antimicrobial activity and antioxidant activity in extract of *L.indica* root (Memali).