

**PRELIMINARY PHYTOCHEMICAL INVESTIGATION OF
ANTIMICROBIAL AND ANTIOXIDATIVE SECONDARY
METABOLITES FROM THE STEM EXTRACT OF *LEEA*
INDICA (MEMALI)**

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ABSTRACT

Leea indica is one of the herbal medicine that widely used by the locals in Malaysia. The current study focused on antibacterial and antioxidant properties from three different stem extracts of *L. indica*. Disk diffusion and Thin Layer Chromatography (TLC) bioautography were used to determine the antibacterial activity while radical scavenging method by using 1,1-diphenyl-2-picrylhydrazyl (DPPH) solution was applied for screening of antioxidant compound on TLC and semi-quantitative dot-blot assay. The phytochemicals screening showed negative result for alkaloids test but positive results for other compounds such as glycosides, tannins, saponins, and steroids. The extracts that were separated by using TLC method were screened for phytochemicals but only methanol (MeOH) extract showed the presence of phenolic compound. The disk diffusion assay showed that dichloromethane (DCM) extract have the strongest antibacterial activity on both *Staphylococcus aureus* and *Staphylococcus epidermidis* with 6.3 mm and 7.0 mm average inhibition zone respectively at 50 mg/mL extract compare to petroleum ether (PE) and MeOH extracts. The PE extract showed strong inhibition against *S. epidermidis* with 6.3 mm average inhibition zone at 25 mg/mL concentration. The results of TLC bioautography also agreed with disk diffusion assay as inhibition zone were observed in DCM extract after compounds had been separated. Antioxidant compounds were observed in all extracts as yellow spot appear on TLC plates after spraying with DPPH solution, but only MeOH extract showed the strongest antioxidant activity even after the extract were diluted until 0.19 mg/mL concentration. The stem extracts of *L. indica* showed potential in terms of antibacterial and antioxidant properties. DCM extract showed most potential in terms of antibacterial activity. The MeOH extract only showed potential in terms of antioxidant activity due to common phenolic compounds that had already been reported as strong radical scavengers.