CHROMATOGRAPHIC ANALYSIS AND ANTIBACTERIAL ASSAY OF *Avicennia officinalis* BARK EXTRACTS

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ABSTRACT

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In this study, the antibacterial activity and the chemical constituents of *Avicennia officinalis* bark were determined.

The antibacterial assay showed that the dichloromethane (DCM) fraction at 1000 ug/mL was most effective against the tested bacteria especially to *Staphylococcus aureus*. It had a microbial index of 0.97 while the positive control, amoxicillin had 1.00. The aqueous fraction did not show antibacterial activity to the organisms tested.

A number of chemical constituents were found to be present in the different fractions obtained from *Avicennia officinalis* bark: alkaloids, cardiac glycosides, flavonoids, phenolic compounds, saponins and terpenes. These constituents were determined using thin layer chromatography. The DCM fraction which showed the highest bioactivity, had the most number of components while the aqueous fraction had the least number of components.

The DCM fraction was subjected to two-dimensional thin layer chromatography. Nine spots were observed with the first solvent system (ethyl acetate-DCM; 5:3) while eleven spots were observed with the second solvent system (ethyl acetate-n-hexane-DCM; 2:1:1).