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BIOACTIVITIES OF *Melicope lunu-ankenda* FROM SEETAWAKA BOTANIC GARDEN, AWISSAWELLA, SRI LANKA: A PRELIMINARY STUDY

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Melicope lunu-ankenda is an important medicinal plant of the family Rutaceae, commonly distributed in the mid-country wet and montane zones in Sri Lanka and tropical regions of Asia. Previous studies have displayed the chemistry and bioactivity of the plant found in various regions in Asia. This study focuses on the bioactivities of the leaf and bark of the plant from the Seetawaka region, the Western Province of Sri Lanka. Leaves and bark of the plant collected were washed, air-dried, ground and subjected to sequential extraction with dichloromethane followed by methanol. The antioxidant activity was determined using DPPH radical scavenging assay and IC_{50} values obtained for dichloromethane leaf (DL), dichloromethane bark (DB), methanol leaf (ML) and methanol bark (MB) extracts were 143.06, 188.17, 49.25 and 70.17 mg L^{-1}, respectively. The LC_{50} values obtained using brine shrimp (*Artemia salina*) lethality assay for DL, DB, ML and MB extracts were 89.52, 74.28, 17.32 and 114.95 mg L^{-1}, respectively. The total phenolic content of the ML and MB extracts were 232.26 and 263.22 mg (GAE) g^{-1} of plant extract, respectively. The antimicrobial activities of the extracts were tested against *Staphylococcus aureus* (*S. aureus),* *Escherichia coli* (*E. coli*), Methicillin-resistant-*staphylococcus aureus* (MRSA) and *Candida albicans* (*C. albicans*) using agar disk diffusion assay. Dichloromethane extracts showed antimicrobial activity against *S. aureus,* and MRSA strains, while methanol extracts showed antibacterial activity against *S. aureus* strain only. Antifungal activity was shown only by the ML extract. Minimum inhibitory concentration (MIC) was determined using agar plate dilution assay and microplate method. DB showed the highest MIC value, above 2,500 mg L^{-1} against *S. aureus, E. coli* and *C. albicans* strains, while ML showed the highest against MRSA strain, above 2,500 mg L^{-1}. The respective tests on extracts confirmed the presence of carotenoids, flavonoids, tannins, terpenoids and triterpenoids. Results showed moderate antioxidant activity, cytotoxicity and antimicrobial activity in the leaf and bark of the plant from Seetawaka, which could make the species a therapeutic agent for some diseases. Thus, the isolation of bioactive compounds can be used as drugs and in cosmetic formulations in the future.

Keywords: Antimicrobial, Antioxidant, Cytotoxicity, *Melicope lunu-ankenda,* Polyphenol content