

Comparison of antimicrobial activities of ethanol, hexane and aqueous extracts of *Epaltes divaricata* against clinical isolates of methicillin resistant *Staphylococcus aureus*

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Staphylococcus aureus has developed resistance against commercial antibiotics, mainly β lactam antibiotics, due to their indiscriminate use. Therefore, scientists are in search of potential antimicrobial substances to alleviate this problem. Medicinal plants used in the traditional medicine would be a potential source to explore antimicrobial drugs with novel mechanism of actions. Antimicrobial activity of *Epaltes divaricata* was previously investigated against methicillin sensitive *S. aureus*. The objective of this study was to determine the effect of ethanol, hexane and aqueous extracts of *Epaltes divaricata* (Heen mudamahana) for potential antimicrobial activity against methicillin resistant *S. aureus* (MRSA) isolates. Potential antimicrobial activity of ethanol, hexane and aqueous extracts of *E. divaricata* (whole plant) was analyzed against twenty MRSA isolates obtained from stock cultures of Department of Microbiology, Faculty of Medicine, university of Ruhuna. Antibacterial activity was screened using agar disc diffusion method. Minimum inhibitory concentration (MIC) was determined using five-fold serial dilution yielding seven dilutions of the original plant extract. Vancomycin was used as the positive control. All twenty MRSA isolates gave inhibition zones of 13.1-18.7, 6.7–13.1 and 6.6-15.6 mm for ethanol, hexane and aqueous extracts of *E. divaricata* respectively. MIC of ethanol, hexane and aqueous extracts ranged between 0.019-2.4, 0.012-0.32 and 0.019-0.48 mg/mL respectively. Hexane extract of *E. divaricata* exhibited the highest antibacterial activity compared to the ethanol and aqueous extracts against the MRSA isolates tested in the study. These plant extracts should be evaluated further to isolate active components.

Keywords: antimicrobial effect, *Epaltes divaricata*, *Staphylococcus aureus* and solvents extract of plant

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