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Antimicrobial activity of dried fruit rind extract of *Garcinia zeylanica*

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Emergence of antibiotic resistance among pathogenic microorganisms has become a severe threat in the medical field. Therefore, search for potential antimicrobial agents, such as substances from medicinal plants with alternative modes of action, is of major interest. *Garcinia zeylanica*, which is an endemic plant to Sri Lanka, is mainly used as a culinary herb. Antimicrobial activity of *G. zeylanica* dried fruit rind extract was evaluated against five bacterial strains and a yeast using Agar well-diffusion method. The study was aimed to investigate any potential antimicrobial effect of the fruit rind extract comparatively with conventional antibiotics. Commercially available dried rinds of *G. zeylanica* were collected and methanolic extract was prepared using Soxhlet method followed by solvent evaporation. Turbidity adjusted (McFarland 0.5), log phase cultures of Methicillin Resistant *Staphylococcus aureus* (MRSA), Methicillin Sensitive *Staphylococcus aureus* (MSSA), *Escherichia coli* (ATCC 25922), *Staphylococcus pyogenes* (ATCC 19615) and *Pseudomonas aeruginosa* (ATCC 27853) were evenly inoculated as a uniform lawn on Mueller Hinton Agar plates, while *Candida albicans* was swabbed to obtain an even lawn on Sabouraud Dextrose Agar . Three wells of 8 mm diameter per each plate were made for positive control, negative control and for the test extract. Amoxicillin was used as the positive control for MRSA, MSSA, *E.coli* and *S. pyogenes* and Ciprofloxacin was used so for *P. aeruginosa*. Fluconazole was the positive control for *C. albicans*. Sterile distilled water was used as the negative control. The test was triplicated for each strain. After 24 hour incubation at 37°C, all the bacterial strains and the yeast were found to be susceptible to the dried rind extract of *G. zeylanica*. The mean inhibition zone diameters of the test extract for MRSA, MSSA, *E.coli*, *S. pyogenes*, *P. aeruginosa* and *C. albicans* were 29.33 mm, 28.67 mm, 20.67 mm, 31.00 mm, 24.00 mm and 25.67 mm respectively when the average inhibition zone diameters of the standard antibiotics were 11.67 mm, 39.33 mm, 29.67 mm, 37.67 mm, 38.67 mm and 27.67 mm accordingly. This study concludes that *G. zeylanica* dried fruit rind extract exerts a significant antimicrobial activity against the bacterial strains and the yeast strain tested.

Keywords: *Garcinia zeylanica*, Antibiotic resistance, antimicrobial effect