

Antibacterial activity of 3 medicinal plants against *Staphylococcus aureus*

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Embelia ribes, *Cassia angustifolia* and *Indigofera aspalathoides* are medicinal plants used in traditional medicine to treat skin diseases. The fruit of *E. ribes*, leaves of *C. angustifolia* and a decoction of *I. aspalathoides* whole plant, leaves and root oil are used for skin diseases. *I. aspalathoides* is used to prepare "Sivanarvembu thylam and kulithiylam" as Siddha drugs. The aim of the study was to screen the antibacterial activity of the decoctions and methanolic extracts of 3 plants against 6 strains of the commonest skin pathogen, *Staphylococcus aureus* including a reference strain (*S. aureus* NCTC 6571) and 5 wild strains of methicillin resistant *S. aureus* (MRSA).

E. ribes and *C. angustifolia* samples were purchased from Kandy and *I. aspalathoides* plant was collected from Jaffna. The decoction was prepared by boiling 40 g of the coarse powder of each plant in 480 mL distilled water until 30 mL was obtained. The methanolic extract was obtained using a Soxhlet extractor. Screening of antibacterial activity was performed by the cut well diffusion method using Mueller Hinton agar (MHA).

The decoction and methanolic extracts of the 3 plants showed activity against *S. aureus* NCTC 6571 and 5 MRSA strains. The zone of inhibition (ZOI) produced by the decoction of *E. ribes* and *C. angustifolia* (19.0 ± 0.0 - 23.0 ± 0.6 mm, 18.5 ± 0.3 mm - 27.0 ± 0.0 mm, respectively) was greater than the ZOI of the methanolic extract against all strains tested (15.7 ± 0.6 - 16.7 ± 1.1 mm, 16.0 ± 0.0 - 18.0 ± 0.0 mm, respectively). However, the ZOI of the methanolic extract of *I. aspalathoides* (26.0 ± 0.0 - 37.0 ± 0.0 mm) was greater than the diameter of the ZOI for the decoction of *I. aspalathoides* (17.0 ± 1.0 - 18.7 ± 0.6 mm) against *S. aureus*.

Both decoction and methanolic extracts of these plants have the ability to inhibit *S. aureus* and further studies are required to determine the potency and stability of this activity.

Keywords: Antibacterial activity, *Staphylococcus aureus* and methicillin resistant *S. aureus*.

Funding: Financial assistance was through HETC Research Grant (JFN/Sidda/N2).