

## A preliminary study on antibacterial activity of common antiseptic and herbal soaps in Sri Lanka against *Staphylococcus aureus*

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**Introduction and Objectives:** Hand hygiene is crucial in preventing transmission of *Staphylococcus aureus*. Solid and liquid forms of antiseptic and herbal soaps are commercially available for the purpose of washing off bacteria and claim to have antibacterial activity. The objective of the study was to determine the antibacterial activity of soaps against *S. aureus*.

**Methods:** Antiseptic soaps in solid (AS<sub>Solid</sub> 1 and 2) (n=2) and liquid forms (AS<sub>Liquid</sub> 1, 2 and 3) (n=3) and herbal soaps in solid (HS<sub>Solid</sub> 1, 2 and 3) (n=3) and liquid forms (HS<sub>Liquid</sub> 1, 2 and 3) (n=3), that were commonly available in pharmacies in the Colombo District were collected. Solid soap samples were scraped with a sterilized sharp knife and dissolved in an appropriate amount of deionized water. The antibacterial activity of each soap was then tested by disc diffusion against *S. aureus* (ATCC 25923) in triplicate. The results were analysed using SPSS.

**Results:** AS<sub>Solid</sub> 1 and 3 resulted in an increased diameter of zone of inhibition (ZoI) against *S. aureus* with the increasing concentrations. A ZoI was seen with all the antiseptic liquid soaps tested against *S. aureus*. Herbal soaps except the one with aloe vera did not result in a ZoI against *S. aureus*.

**Table 1. Diameter of the Inhibition zones of Solid and Liquid forms of Antiseptic and Herbal Soaps against *S. aureus***

Soap Sample	Solid Soaps					Liquid Soaps		
	Main Ingredients	Mean Diameter of Zol ± SD (mm)				Main Ingredients	Mean Diameter of Zol ± SD (mm)	
		50 mg/ml	100 mg/ml	250 mg/ml	500 mg/ml		2 <sup>0</sup>	2 <sup>-1</sup>
AS 1	Triclosan	-	11.00±1.41	13.00±1.41	15.00±1.41	Tetra sodium EDTA	17.00±1.41	17.00±1.41
AS 2	Cetrimide	-	-	-	-	Lauryl Sulfate	16.00±0.00	14.00±0.00
AS 3	Trichlocarban	10.00±0.00	12.00±0.00	13.00±1.41	14.00±0.00	Tetra sodium EDTA Lauryl Sulfate	18.00±0.00	16.00±0.00
HS 1	Neem	-	-	-	-	Neem	-	-
HS 2	Sandalwood	-	-	-	-	Aloe vera	14.00±0.00	12.00±0.00
HS 3	Turmeric	-	-	-	-	Citrus	-	-

### Conclusions:


Both solid and liquid forms of antiseptic soaps have antibacterial activity against *S. aureus*, while with the exception of Aloe vera, both solid and liquid herbal soaps did not show activity.

**Keywords:** *Staphylococcus aureus*, Antiseptic, Herbal, Liquid, Solid, Soaps

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