

## BACTERICIDAL ACTIVITY OF DIFFERENT SOAPS AGAINST *STAPHYLOCOCCUS AUREUS*

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### ABSTRACT

A prospective bactericidal activity of various market soaps was performed against Gram-positive bacteria i.e. *Staphylococcus aureus* to ascertain the efficacy of different soaps in daily use. Phenol was used in the study to compare disinfectant activity with these soaps. Minimum inhibitory concentration (MIC) and minimum bactericidal concentration (MBC) were determined by the NCCLS reference microdilution technique. Among these eight soaps and one phenol, the highest efficacy was performed by Safeguard and its MIC value was 256 µg/ml. Second most effective soap was Johnson & Johnson and its minimum inhibitory concentration was 1024µg/ml. Dettol, Lifebuoy white and Lifebuoy red had similar activity against *Staphylococcus aureus* with MIC of 3072 µg/ml, whereas phenol and Sufi soap exhibited similar MIC as 10240 µg/ml. Least inhibitory activities were shown by Sunlite and Lux with MIC of 20480 µg/ml, and 24576 µg/ml respectively. The bactericidal activity of these soaps were in increasing order as, Lux, Sunlite, Sufi, Phenol, Lifebuoy White, Lifebuoy Red, Dettol, Johnson & Johnson and Safeguard respectively.

### INTRODUCTION

Soaps are the combination of fats and oils (of animal or vegetable origin) and salt (Friedman and Wolf, 1996). Dermatological bars or cakes and disinfectants are chemically different from soaps, and contain modified detergents to enhance their use for antibacterial activity. An antibacterial soap can remove 65% to 85% of bacteria from human skin (Osborne and Grube, 1982).

Microorganisms carried on the skin of the human body divided into two distinct populations: resident and transient (Lowbury, *et al.*, 1964). Resident microorganisms; *Propionibacterium acnes*, coagulase-negative staphylococci; members of the *Corynebacterium* and *Acinetobacter* species; and certain members of the Enterobacteriaceae family are considered as permanent inhabitants of the skin (Garner and Favero, 1985). Transient microorganisms are found on and within the epidermal layer of skin, as well as other

areas of the body where they do not normally reside. Almost all disease-producing microorganisms belong to this category (Steere and Mallison, 1975). Pathogens that may be present on skin, as transient types include: *E. coli*, *Salmonella spp.*, *Shigella spp.*, *Clostridium perfringens*, and Hepatitis A virus.

Antibacterial soaps and disinfectants are used as an adjunct to acne treatment, since they contain bacteriostatic agents. When used properly, these washes may effect a reduction in *P. acnes* and prevent secondary infections in acne skin, but they are drying and irritating to most skin (Kuehl *et al.*, 2003). Detergency of soaps and disinfectants is another important factor in removing transient microorganisms from hands. High detergency products possess lathering and emulsification abilities. Determinations of the products; soaps and disinfectant is necessary in order to establish that which products clean hands sufficiently in the easiest and most acceptable manner for