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Survival of Skin Resident Bacterial Flora (SRBF) in the presence of facial cleansers

Balasooriya B.A.Y.B.[1*], Rathnayake I.V.N.[1]

[1]*Department of Microbiology, Faculty of Science, University of Kelaniya, GQ 11600, Sri Lanka*

Human skin has a balanced Skin Resident Bacterial Flora (SRBF) which is beneficial for healthy skin maintenance and different factors are responsible for their well-being. Since facial cleansers are such potential factors as a widely used personal care product, their effects on human facial SRBFwere studied in terms of toxicity. A dose- response analysis was performed by exposing *Staphylococcus aureus* and *Staphylococcus epidermidis*, which represent human facial SRBF, to a commercially available facial cleanser containing a high number of chemical ingredients, at eight different concentrations from 100 mL L^{-1} to 0.1 mL L^{-1}. The concentrations were prepared depending on previous data of the average amount of cleanser usage at once. The percentage survivals and the EC_{50} values calculated according to the bacterial growth were compared to evaluate the toxic effect of the cleanser. The percentage survivals of both the test organisms were decreased with time when increasing the test concentrations.The EC_{50} values for *Staphylococcus aureus* were decreased from 2.928 mL L^{-1} to 0.5717 mL L^{-1} and the EC_{50} values for *Staphylococcus epidermidis* were increased from 1.761 mL L^{-1} to 19.34 mL L^{-1} from 24 h to 48 h resulting more toxic effect towards *Staphylococcus aureus* compared to *Staphylococcus epidermidis*at the end of the incubation according to the EC_{50} values.The product was negatively affected on the survival of both the test organisms at higher concentrations without any significant difference in the toxic effect at both the time intervals (P= 0.063) with revealing the necessity of future aspects.

Key words: *Skin resident flora, Facial cleansers, Toxicity, EC_{50}, Percentage survival*

*Corresponding author: yash.balasooriya@gmail.com