

In vitro sun protection factor determination of herbal oils used in cosmetics

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ABSTRACT

The aim of this study was to evaluate ultraviolet (UV) absorption ability of volatile and nonvolatile herbal oils used in sunscreens or cosmetics and express the same in terms of sun protection factor (SPF) values. Sun protection factor is a laboratory measure of the effectiveness of sunscreen; the higher the SPF, the more protection a sunscreen offers against the ultraviolet radiations causing sunburn. The in vitro SPF is determined according to the spectrophotometric method of Mansur et al. Hydroalcoholic dilutions of oils were prepared, and in vitro photoprotective activity was studied by UV spectrophotometric method in the range of 290-320 nm. It can be observed that the SPF values found for nonvolatile oils were in between 2 and 8; and for volatile oils, in between 1 and 7. Among the fixed oils taken, SPF value of olive oil was found to be the highest. Similarly among essential oils, SPF value of peppermint oil was found to be the highest. The study will be helpful in the selection of oils and fragrances to develop sunscreens with better safety and high SPF. Oily vehicles are more effective for producing a uniform and long-lasting film of sunscreen on the skin, and their emollient properties protect the skin against the drying effects of exposure to wind and sun. Volatile oils are used as perfumes in cosmetics.

KEYWORDS

Erythema . herbal oils . spectrophotometric method . sun protection factor . sunscreens

REFERENCES

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