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FORMULATIONS OF SUNSCREEN LOTIONS USING ACORUS CALAMUS AND ZINC OXIDE NANOPARTICLES AND THEIR IN VITRO EVALUATION OF SUN PROTECTION FACTOR (SPF)

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Abstract

Objective*: The present research work involves formulation of a sunscreen lotion using Acorus calamus extract and biogenically synthesized zinc oxide nanoparticles (ZnONPs)*

Methods*: The prepared sunscreen lotion was evaluated for Sun Protection Factor (SPF) values by a facile UV-visible spectrophotometric method.*

Results*: The SPF value of the Acorus calamus sunscreen lotion increased with the addition of ZnONPs. The SPF value of the combination product revealed a synergistic action between ZnONPs and the phytoconstituents present in the A. calamus extract. The prepared sunscreen lotion was compared for SPF with that of the commercially available formulations. The sunscreen lotion containing zinc oxide nanoparticles was found to have higher SPF compared to that of conventional one indicating the effect of reduction in particle size, from micro to nano, on the sun protection factor.*

Conclusion*: The proposed UV-spectrophotometric method is simple, rapid, employs low cost reagents and can be used in the in vitro determination of SPF values in many cosmetic formulations.*

Author Keywords

Sunscreen lotion, Acorus calamus, SPF, Zinc oxide nanoparticles

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