



In vitro Efficacy of Photoprotection in Sunscreens: a Comparison Between Methods

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SUMMARY. Sunscreens are known to play an important role on the prevention of skin cancer, as they act by blocking the carcinogenic solar radiations. The currently methods for determining the sun protection efficacy of these products are all based on *in vivo* tests. In this light, the aim of the present study was to compare the performance of two spectrophotometric *in vitro* methods, in order to determine which one generates more trustworthy Sun Protection Factors (SPF) values: the classical UV spectrophotometry or the diffuse transmittance reflectance spectrophotometry. For that, twenty-five SPF 30 commercial sunscreen samples were used. The methods generated different results, being the diffuse transmittance spectrophotometry more appropriate and reliable for determining the SPF of these products. Moreover, it provides as additional advantage the possibility of quantifying the protection against UVA radiation through the UVA/UVB Ratio and the Critical Wavelength.

KEY WORDS: Broad spectrum sunscreen, Diffuse transmittance, Sun protection factor.

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