

SYNTHESIS AND PRELIMINARY EVALUATION OF SEVERAL CHALCONE DERIVATIVES AS SUNSCREEN COMPOUNDS

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Abstract. Four chalcone derivatives containing chloro and methoxy substituents were synthesized and pre-evaluated as broad-spectrum UV protector with intrinsic antioxidant activity. UV absorbance of chalcones **1-4** showed a wide range of UV absorbance values in UVB and UVA regions (λ_{\max} = 310-360 nm) and molar absorptivity values (ϵ = 14,000-20,000 M⁻¹cm⁻¹). Chalcones **3** and **4** showed better photostability than chalcones **1** and **2** because the lowering of their absorbance was smaller and slower under UVB irradiation. A combination of the spectra of chalcone derivatives **1-4** indicated that a formulation containing all four will provide a broad-spectrum sunscreen protecting the skin from UVA and UVB.

Keywords: chalcone, photostability, absorbance, sunscreen, broad-spectrum.

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