



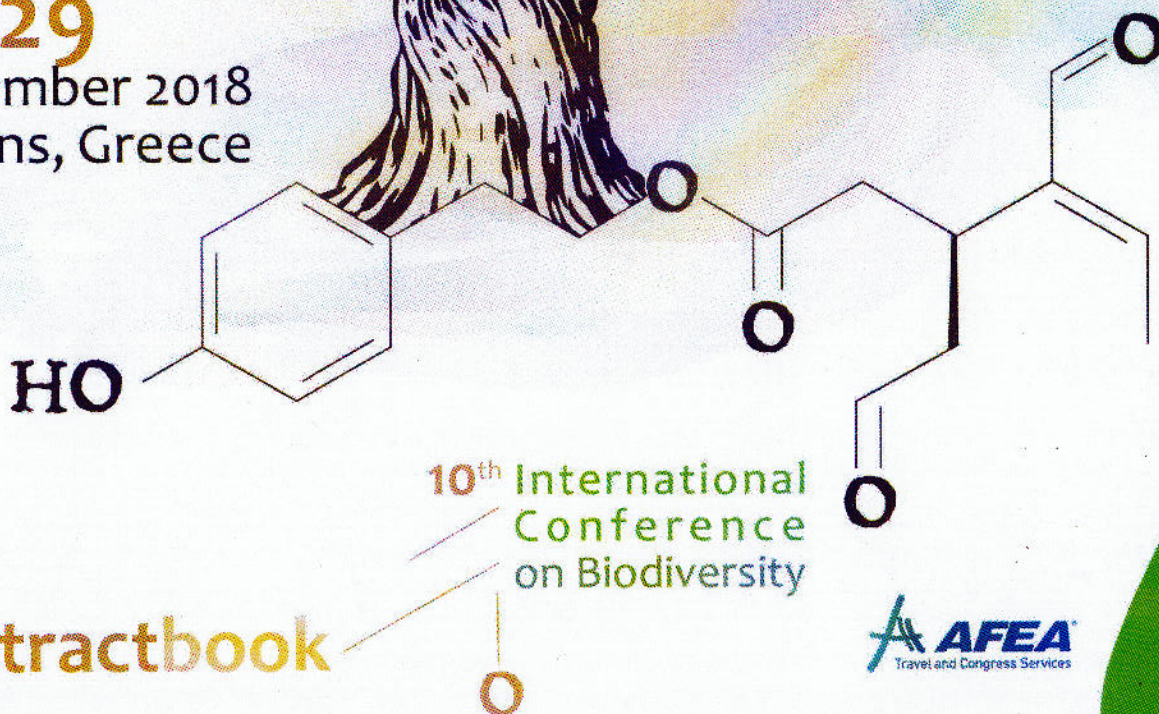
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## Development of herbal sunscreen formulations from *Ophiorrhiza mungos*

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The exposure to the ultraviolet (UV) component of the solar radiation is identified as a major contributing factor for conditions such as hyperpigmentation, wrinkling, erythema and inflammation [1]. To counteract this harmful UV radiation, synthetic sunscreens have been introduced to the market. However, with the disclosure of the adverse effects of synthetic sunscreen products, there is a growing demand for sunscreens of herbal origin [2]. In order to cater to this need, we have been studying the photoprotective potential of Sri Lankan medicinal plants. The work presented here focuses on the development of herbal sunscreens from *Ophiorrhiza mungos*, a plant widely utilized as a remedy for several dermatological conditions. The hydroalcoholic extract of *O. mungos* was incorporated into the aqueous cream-base at different percentages (25%, 50% and 75%) and the UV absorption measurements were obtained for each formulation to determine its UV filtering potential and subsequently the sun protection factor (SPF). To compare the efficacy of the herbal formulations, a commercial synthetic sunscreen and the aqueous cream-base were used as positive and negative controls respectively. The formulation containing 75% of the extract surpassed the other two formulations with its high SPF, photostability and broad-spectrum of UV absorption. Interestingly, the result with commercial synthetic sunscreen product was found to be inferior to our formulation. The initial SPF value of this formulation was determined as 22.9 and any significant reduction of this SPF value was not observed after its exposure to direct solar radiation for 21 days, thus, demonstrating the photostability. Furthermore, the high UV absorbance in 260-360 nm range was evident for its broad-spectrum sunscreen potential against both UV-A and UV-B radiation. Therefore, this study clearly demonstrated the suitability of *O. mungos* to be developed into a commercial herbal sunscreen and the experiments are underway to enhance its bioavailability via nanotechnology.