

Evaluation of *in vitro* sun screening activity of *Solanum violaceum* (Thiththa thibbatu) leaf extract

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In this study, the total phenolic content (TPC), total flavonoid content (TFC) and *in vitro* sun screening activity of 80% aqueous methanol extract of *Solanum violaceum* (Thiththa thibbatu) leaves were evaluated. TPC and TFC were determined by colorimetric methods using Folin-Ciocalteu reagent and aluminium chloride, respectively. Sun protection factor (SPF) was determined according to the Mansur equation using UV absorption data in the range of 290-320 nm (at 5 min interval) taken in methanol. The methanol extract of *S. violaceum* leaves was subjected to phytochemical screening for common phytochemicals and the results revealed the presence of phenolic compounds, flavonoids, saponins, carbohydrates and alkaloids. It was found to have a total phenolic and total flavonoid contents of 2781.168 ± 196.782 mg GAE/100 g DW, and 1151.048 ± 36.321 mg CAE/100 g DW, respectively. A concentration series of 1.0, 0.5, 0.2, 0.1 and 0.05 mg/ml solutions of *S. violaceum* extract was prepared in methanol along with the same concentration series of the reference Dermatone®. The SPF values were determined at all these concentrations and it was found that at 1.0 mg/ml concentration SPF value was 40 which is significantly higher than that of the reference Dermatone® (35) at the same concentration. It also has a SPF value of *ca* 12 at 0.2 mg/ml concentration which is close to the threshold value (15) of efficient sunscreen agents at that concentration. Finding of a significant sun screening activity in *S. violaceum* leaf extract would open an avenue for the preparation of herbal sunscreens with little or no side effects.

Keywords: *Solanum violaceum*, sunscreening activity, phenolic and total flavonoid contents

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