


Abstract

Juglan regia is the scientific name of Walnut tree belongs to *Juglandaceae* family and *Glycyrrhiza glabra* is the scientific name of Licorice belongs to flowering plant family *Fabaceae* both contain phytochemicals that absorb in UV region. The main objective of this study was to determine the SPF of Walnut tree bark and Licorice root using UV-Visible spectrophotometer. The SPF of aqueous extract of both Walnut tree bark and Licorice root was determined. UV-Visible spectrophotometer used to determine the absorbance of all samples at 290-320nm and final SPF values were obtained. The aqueous extract of Walnut tree bark and Licorice root was shown good SPF values. The antioxidant activity was determined by using DPPH and ABTS assay. The % ABTS free radical scavenging activity for *methanolic* extract of *Juglans regia* and *Glycyrrhiza glabra* were 15.23% and 26.51% respectively. The %DPPH antioxidant activity of *methanolic* extract of *Juglans regia* and *Glycyrrhiza glabra* were 60.43 and 67.70 respectively. The total phenolic contents and total flavonoid contents were also determined. The total phenolic contents of *methanolic* extract of *Juglan regia* and *Glycyrrhiza glabra* were 155mgGAE/ml and 168mgGAE/ml respectively. The total Flavonoid contents of *methanolic* extract of *Juglan regia* and *Glycyrrhiza glabra* were 25mgGAE/ml and 101mgGAE/ml respectively. Natural sunscreen samples of different concentration were formulated using maximum SPF values concentrations of both aqueous extracts. The SPF of all formulations was also evaluated using UV-Visible spectrophotometer. All formulations have characteristics value of SPF. *pH* measurement test showed that all formulations have *pH* 5.3-6.5 which is good range for sunscreen. All formulations were showed good spread ability, characteristics odor and no skin irritation.

Keywords: Sun Protection Factor, Anti-oxidant activity, UV-Visible spectrophotometer  (Ctrl) ▾