

Evaluation of UV blockage and SPF determination of seven medical plants extracts

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Background and Aims: Skin is one of the most important organs of the body and the main barrier that protects the other organs against external invasion. Damaging factors such as sunlight can cause skin dehydration, skin pigmentation, photo aging, etc. So it seems necessary to protect skin against sun rays. Chemical compounds as sun protecting agents have some adverse effects but some medical plants that contain active ingredients like as flavonoids having blocking effect with low adverse effects.

Methods: In this study seven medical plants: *Achillea wilhelmsi* L., *Calendula officinalis* L., *Ruta graveolens* L., *Fumaria parviflora* Lam, *Lawsonia inermis* L., *Nymphaea alba* L., *Punica granatum* which contains high amount of flavonoids were evaluated. Methanolic extracts were prepared and flavonoids were isolated and fractioned by ethyl acetate. Then SPF of these extracts was determined by diluted solution method as an in-vitro method.

Results: Among all of the plants, *Ruta graveolens* with SPF 14.62, *Calendula officinalis* with SPF 9.8 and *Achillea wilhelmsi* with SPF 9.3 had the maximum protection against UV rays.

Conclusions: Despite the protecting effect of these plants against harmful UV rays and anti-inflammatory effects of these plants, we can recommend use of these extracts in antisolar products.

Keywords: SPF; Flavonoids; Skin