

Assessment of Viscoelasticity and Antioxidant Effect of Herbal Moisturizer Cream Containing *Alkanna tinctoria* (L.) Roots And Sesame oil

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Abstract:

Medicinal plants have been proved to be a powerful remedy in cosmetic preparations due to their antioxidant, photo protection, moisturizing and anti-aging effects. Accordingly, this study aimed to formulate herbal cream contains *Alkanna tinctoria* (L.) roots extract and sesame oil and to investigate antioxidant, sun protection factor (SPF) and viscoelasticity effects of this formula. The results in DPPH inhibition assay for antioxidant evaluation showed that the half maximal inhibitory concentration (IC_{50}) was $30.9\mu\text{g/ml}$ for pure sesame oil and this value decreased to $8.7\mu\text{g/ml}$ when *Alkanna tinctoria* was soaked in sesame oil for 72 h comparing these values to (IC_{50}) equal to $2.08\mu\text{g /ml}$ for Trolox (Reference compound) the phenolic compounds in this herb had a significant antioxidant effect. For sun protection factor (SPF) assessment the results showed also a significant increase in sesame oil SPF value when mixed with *Alkanna tinctoria* as this value elevated from 2.23 to 7.133. On the other hand viscoelasticity evaluation using Cutometer[®] analyzer showed better readings in overall elasticity curve in the last day after using the formulated herbal cream for 5 days. Cream containing *Alkanna tinctoria* (L.) roots extract and sesame oil might improve the elasticity of the skin.