Assessment of Free Radical Scavenging Activity and Anti Elastase Power for Different Extracts of Alkanna Root Bark

Students:
Basil Fuqahal
Ahmad Nawanda
Maha Assadil

Supervisor:
Dr. Nidal Jaradat

Co-Supervisor:
Miss. Fatima Hussain
Miss: Linda Issa

Abstract:

Background: Skin protection against wrinkles and pigmentation changes are among the most common challenges for modern science and cosmetics. These are caused by unusual disruption of connective tissue, the formation of free radicals and ultraviolet radiation. The current study aimed to investigate the phytoconstituents, antioxidant activity, sun protection factor (SPF) and anti-elastase effects of the root bark of the traditional plant Alkanna roots bark using four solvents fractions.

Methods: Qualitative and quantitative phytoconstituents, antioxidant activity, sun protection factor and anti-elastase effects were assessed using standard pharmaceutical and cosmeceuticals assays.

Results: The results of antioxidant, anti-elastase and sun protection factor (SPF) activities were the highest for the acetone fraction with$IC_5$08.51±1.94tg/ml, 10.02±0.3 µg/ml and SPF value of 6.38, respectively. However, these results may occur due to its high contents of phenols and flavonoids which were59.48±0.56 mg of GAE/g extract fraction and 26.55±1.6 mg of QUE/g extract fraction, respectively.

Conclusion: The acetone fraction of Alkanna root bark could be a promising candidate for cosmetic and pharmaceutical preparations due to the potential antioxidant, anti-elastase enzyme and sun protection activities.