

Abstract

Topic Nanoformulations with Potential Cosmetic Applications [†]

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Abstract: Chronic exposure of human skin to solar UV radiation is widely recognized as the main factor responsible for photoaging. The role of protection is essential to avoid skin cancer and other unwanted effects. The aim of the current study is to develop cosmetic formulations for sun protection based on silver nanoparticles (as an active ingredient) and natural extracts with high levels of bioactive compounds recovered from viticultural waste.

Keywords: nanoformulations; natural extracts; cosmetic application; UV blocker

1. Introduction

The history of photoprotection dates back to ancient times, when the harmful influences and damage caused by long-term exposure to ultraviolet radiation were noticed. Over time, different products have been used, from natural products obtained from plants to synthesized chemical substances. Nowadays, the interest in these formulations is directed towards natural chemical compounds to avoid the use of harmful and hazardous compounds for humans and the environment.

2. Materials and Methods

In this paper, a cosmetic formulation for sun protection, based on silver nanoparticles and natural extracts from viticultural waste, was studied. The proposed material was obtained in the form of a hydrogel due to its emollient properties, non-greasy texture, ease of handling, compatibility with various excipients, and miscibility in water. The cosmetic formulation with sun protection and an antimicrobial effect was obtained based on an extract of vine shoots (from the Fetească Neagră Șt. variety, obtained by microwave-assisted extraction). The material was also characterized from an analytical point of view.

3. Results

The obtained results suggest that the obtained topic formulation presents a good antioxidant activity, antimicrobial activity (against *Enterococcus faecalis*, *Pseudomonas aeruginosa* ATCC 27853, *Candida albicans* ATCC 10231), and a medium sun factor protection.

4. Conclusions

The developed study reinforces the idea of using waste from the agro sector to obtain value-added products.



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