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6th National Medicinal Chemistry Meeting

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Book of Abstracts

Sociedade Portuguesa de Química

Universidade de Aveiro

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Application of hydralcoholic extracts of *Salvia officinalis* and *Salvia elegans* in cosmetic formulations

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Salvia Officinalis and *Salvia elegans* are shrubs belonging to the genus Salvia, family of the Lamiaceae, easily found in the Mediterranean region, Mexico and Guatemala respectively. In addition to traditional medicine, *S. officinalis* is of great importance to the pharmaceutical, cosmetic and food industries. (Cuvelier et al., 1996; Martins et al., 1998 in Povh & Ono, 2008), whereas *S. elegans* is known in cooking as a preservative or flavoring (Pereira et al., 2014). Natural products have increased, discovering new therapeutic indications, meeting the demands of the world population taking into account their quality and safety. In this study, the focus is on phenolic compounds as an active ingredient in an anti-age formulation.

Carbopol and methylcellulose-based gel was prepared together with *Salvia officinalis* and *Salvia elegans* hydroalcoholic extract as their active principle by performing physical-chemical, organoleptic gel stability tests and performing the eye irritability test (HET-CAM), beyond performing hydrodistillation at Clevenger. The essential oil was extracted by steam entrainment, yielding after 3 hours. The hydroalcoholic principle gels were prepared at three different concentrations, 1.25; 2.5 and 5%, and then tests were performed to evaluate the stability of the product obtained as: light cycles, freeze / thaw cycles, centrifugation and vortexing, pH determination, microbiological analysis and HET-CAM test.

According to the results, the pH test showed changes for the two plants containing their gels but never exceeding the ideal limits for the skin, even when exposed to the light cycle, only the color that was changed after 15 days, in the different concentrations. In freezing / thawing tests for *Salvia officinalis* the methylcellulose gel did not change, the carbopol gel did change the appearance but small changes are acceptable as the samples are subjected to extreme heat (45 ° C) and cold temperatures. (-20 ° C). For *Salvia elegans* there was a change in appearance and pH, which was also changed in the methylcellulose gel. All pH changes do not lead to considerer the gel as inappropriate. In microbiological tests the oils have a moderate effect, while in the other tests there were no changes. Centrifugation and vortex tests were performed for both gels using both plants with only hydroalcoholic extract at different concentrations and there was no change. All gels had an alcoholic odor during the tests.

It can be concluded that carbopol and methylcellulose gel do not appear to have any detrimental effects when used in this cosmetic product, even when used in conjunction with plant essential oil and can therefore be used as an anti-aging formulation. However, the development of more tests is extremely important as toxicity tests, but stability tests already have promising results.

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