

Rheological Characterization of Gels Based on Medicinal Plant Extracts Mixture (Zingibar Officinale and Cinnamomum Cassia)

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Abstract : The purpose of this work is the study of the viscoelastic behaviour formulating gels based plant extractions. The extracts of Zingibar officinale and Cinnamomum cassia were included in the gel at different concentrations of these plants in order to be applied in anti-inflammatory drugs. The yield of ethanolic extraction of Zingibar o. is 3.98% and for Cinnamomum c., essential oil by hydrodistillation is 1.67 %. The ethanolic extract of Zingibar.o, the essential oil of Cinnamomum c. and the mixture showed an anti-DPPH radicals' activity, presented by EC50 values of 11.32, 13.48 and 14.39 mg/ml respectively. A gel based on different concentrations of these extracts was prepared. Microbiological tests conducted against Staphylococcus aureus and Escherichia colishowed moderate inhibition of Cinnamomum c. gel and less the gel based on Cinnamomum c./ Zingibar o. (20/80). The yeast Candida albicansis resistant to gels. The viscoelastic formulation property was carried out in dynamic and creep and modeled with the Kelvin-Voigt model. The influence of some parameters on the stability of the gel (time, temperature and applied stress) has been studied.

Keywords : Cinnamomum cassia, Zingibar officinale, antioxidant activity, antimicrobien activity, gel, viscoelastic behaviour

Conference Title : ICR 2024 : International Conference on Rheology

Conference Location : Algiers, Algeria

Conference Dates : March 25-26, 2024