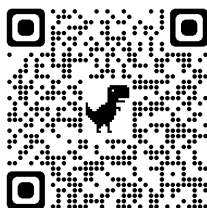


CURRENT RESEARCH TOPICS IN PHARMACY: *Herbal Drug Research*

November 24th, 2022 14.00 PM ISTANBUL

FOR REGISTRATION:



First Session- Moderator: Betül OKUYAN 14.00-15.30 PM

Welcome- Prof. Hatice Kübra ELÇİOĞLU

Safety of herbal drugs- Assist.Prof. Ayfer BECEREN
Marmara University, Istanbul, Turkey

Antibacterial herbal effect applied in cosmetic emulsion preservation- Dr.Rezarta SHKRELI
Aldent University, Tirana, Albania

R&D studies in the development of traditional herbal medicinal products- Prof. İ. İrem TATLI ÇANKAYA
Hacettepe University, Ankara, Turkey

Second Session- Moderator: Betül OKUYAN 16.00-17.30 PM

The role of metabolomics in medicinal plant science-Prof.Emirhan NEMUTLU
Hacettepe University, Ankara, Turkey

Using diterpenoids from *Plectranthus* spp. As starting tool in drug development- Assoc.Prof.Patricia RIJO
Lusofona University, Lisbon, Portugal

Herbal drugs as novel antibacterials- Assoc. Prof. Entela HALOCI
University of Medicine, Tirana, Albania

The potential of certain phytochemicals as essential nutrients- Asst.Prof. Lukasz CIESLA
The University of Alabama, Tuscaloosa, USA

Chair

Prof. Hatice Kübra ELÇİOĞLU

Vice Chair

Prof. Levent KABASAKAL & Assoc. Prof. Esra TATAR

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ANTIBACTERIAL HERBAL EFFECT APPLIED IN COSMETIC EMULSION PRESERVATION

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ABSTRACT

For a long time, pharmaceutical industries have been particularly interested in the microbiological safety of cosmetics since microbial decomposition can result in product degradation and pose a health concern to customers. Modern cosmetics have a rich composition that, when combined with their fluid formulation and close contact with bacterial flora of the skin, creates an excellent environment for the growth of microorganisms. Preservation excipients stop and limit the development of germs that could cause contamination during the production process, storage period, or consumer use. The most common synthetic preservatives used in cosmetic items are parabens (PHBs), yet new research has revealed that parabens have estrogen-like effects. Nowadays, natural preservatives such as essential oils have gained a lot of attention due to their antimicrobial properties. The goal of this study was to formulate a cosmetic emulsion loaded with various concentrations of natural preservatives; to assess and then compare the sample's stability and antibacterial activity. Different cosmetic emulsion samples with an anionic emulsifier were formulated utilizing various concentrations of natural preservatives. After 24 hours of preparation, all samples were assessed for organoleptic and physicochemical properties. During the storage period of four weeks, testing on the samples' behavior in relation to accelerated tests, light tests, and microbiological stability tests were also conducted. Samples with a higher concentration of natural preservatives were shown to be unstable during the accelerated stability test due to changes in color and phase separation in the second week of storage at the temperature of 40°C; their rheological characteristics also revealed a considerable drop in viscosity, going from 4880±24.3 to 3754±26.2. All of the formulations had pH values that fell within the physiological range for human skin, which varied from 6.11±0.31 to 6.78±0.31. All samples showed no signs of microbial development by the end of the fourth week. Cosmetic emulsions entrapped with a lower concentration of natural preservatives showed good stability and microbiological safety under various storage conditions. To conclude, the enrollment of essential oils as natural preservatives could be a new possibility for the safety of paraben-free cosmetics.

Keywords: Cosmetics, natural preservative, sample preparation, stability evaluation, microbiological safety.

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