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Abstract

REVIEW ARTICLE

Herbal Sunscreen: An Overview

Rajendra Jangde* and S. J. Daharwal.....35

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ABSTRACT

A modest investment in prevention produced substantial savings in illness-related costs. The FDA recently released its final orders concerning the labeling of sunscreen. The final monograph updates the tentative final monograph regarding over the counter (OTC) sunscreen products. Among the labeling standards are removals of the term "sun block" inclusion of a statement detailing the importance of sunscreen to prevent harmful effects of the sun, three sun protection categories: minimum, moderate, high, a new SPF category of 30+ for products with SPF values greater than 30, uniform, and streamlined labeling for all sunscreens.

KEYWORDS: Herbal, Sunscreen, SPF, Skin.

A Review on Medicinal Herbs Used for Acne

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ABSTRACT

Acne vulgaris is a common human skin disease, characterized by areas of skin with seborrhea, comedones, papules, pustules and nodules. It affects mostly skin with the densest population of sebaceous follicles and these areas include the face, upper part of chest and back. Severe acne is inflammatory, but acne can also manifest in non-inflammatory forms. Herbal treatment for acne is much safer in comparison to chemical formulations. The main two microbes that infect the acne are *Propionibacterium acnes* and *Staphylococcus epidermidis*.

In addition to using acne herbal treatments, consuming foods that are enriched with beta carotenes and refraining from oily foods are imperative for better response. Tree tea oil, olive leaf extract, aloe vera extract, neem extract etc are few examples of herbs with effective anti acne activity. The alternative systems of medicines like Ayurveda, Siddha, Unani and Homeopathic systems have different kinds of treatment for this condition.

KEYWORDS: Tea tree oil, *Propionibacterium acnes*, *Staphylococcus epidermidis*, Comedones, Inflammation

Pilosebaceous Targeting – An Emerging Concept in Topical and Cosmetic Science

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ABSTRACT

Pilosebaceous targeting involve targeting to pilosebaceous unit which is comprises of hair follicle and associated glands. Skin is of great interest for pharmaceutical and cosmetic industry. Topically applied substances penetrate into skin via transcellular, intercellular, and follicular paths. Follicular path has been largely ignored because hair follicles constitute only 0.1% of total skin. Nonetheless, hair follicle has great potential for skin treatment, owing to its deep extension into the dermis and thus provides much deeper penetration and absorption of compounds beneath the skin than seen with transdermal route. Pilosebaceous targeting follows this follicular path and opens a new strategy for topical drug delivery. Pilosebaceous targeting offers opportunities for localized delivery in hair therapy and treatment of hair follicle associated diseases like alopecia, acne and skin cancer as well as in gene therapy which is given during cancer chemotherapy to overcome loss of hair or hair colour. Hair follicle is also an entry point for

topically applied substances and significantly contributes to the transport of drugs into the skin. Therefore, pilosebaceous targeting helps systemic delivery of drugs via hair follicle. Targeting to pilosebaceous unit can be done by using nanocarriers like liposomes, niosomes, microspheres and nanoparticles. The follicular penetration of topical compounds can be investigated *in vivo* by laser scan microscopy, fluorescence microscopy, atomic force microscopy (AFM), autoradiography, etc.

KEYWORDS: Pilosebaceous unit, hair follicle, nanocarriers, alopecia, acne

RESEARCH ARTICLE

Development and Evaluation of Topical Drug Delivery System for Terbinafine Hydrochloride using Niosomes P.S. Salve*.....52

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ABSTRACT

Fungal infection caused by fungus called dermatophyte infects top layer of skin, hair or nails. An allylamine antifungal agent terbinafine hydrochloride is used topically and orally. Its topical administration is preferred but barrier properties of stratum corneum decreases absorption and requires frequent application. It has low oral bioavailability due to hepatic first pass metabolism and many systemic adverse effects. Niosomes have been reported to enhance residence time of drugs in stratum corneum and epidermis, while reducing systemic absorption and improve penetration of entrapped drug across skin. Niosomes of terbinafine hydrochloride were prepared by film hydration method in size range of 0.24 to 9.4 μm . Maximum entrapment efficiency was observed in formulation containing span 60 at 1:1 molar ratio of cholesterol and surfactant. Zeta potential values of niosomes containing span 60 (1:1) were more stable than other niosomal formulations. Niosomes were incorporated in 1.5 %w/v carbopol gel at pH 6.8-7.0. In *in vitro* antifungal study against candida albicans, vesicular systems were found to be more effective than conventional gel. The formulations containing tween 60 (1.5:1) and span 80 (1:1) were found to have maximum zone of inhibition. In *ex vivo* percutaneous permeation studies, niosomal formulations have shown superior skin penetration and drug deposition as compared to conventional formulation. The formulation containing tween 80 has shown higher drug deposition in rat skin as compared to other formulations. The niosomal vesicles can be used to enhance penetration and deposition of terbinafine hydrochloride in skin.

Formulation of gel and its UV protective study of some medicinal flowers

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ABSTRACT

The present study was designed to prepare sunscreen herbal formulations gel. *Hibiscus rosa-sinesis* L. (Malvaceae), *Rosa Damascena* (Rosaceae), *Spathodea campanulata* L. (Bignoniaceae) is one of the well-known drugs for its therapeutic values in traditional medicine. In the present study the drug was screened for its cosmetic use. All the three herbal drugs containing flavonoid showed sunscreen activity. The sunscreen activities of gel formulations could be related to the free radical scavenging properties of polyphenol compounds in the extracts incorporated in it. The method is performed by UV –visible spectrophotometry in the range of 200-400nm. Result of the extracts alone and gel formulation showed maximum absorbance at 270-300nm.

KEYWORDS: *Hibiscus rosa-sinesis* L, *Rosa damascena*, *Spathodea campanulata* L. sunscreen gel

Design and Development of *Aloe vera* Lotions and Determination of Their Sun Protection Factor

V. Sai Kishore*, N. Balaji, K. Srikanth and J. Hemanth.....66

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ABSTRACT

Sun light causes damage to skin by inducing photoaging, photocarcinogenesis. *Aloe vera* is most popular in the treatment of dermatological disorders. In this study, in to the calamine lotion aloe gel (conventional lotion), a novel lotion containing freeze dried aloe powder beads and freeze dried aloe powder lotion were incorporated. The aim of this study is to compare the efficacy of novel lotion (freeze dried aloe powder beads and freeze dried aloe powder lotion) and conventional lotion (aloe gel). Aloe gel beads were prepared by using the ionic gelation technique. Beads were in spherical shape with a diameter of 0.510 ± 0.143 mm. The novel, conventional lotion were evaluated for the colour, P^H of preparation, sedimentation volume, redispersibility, spreadability, rheological, *In vitro* and *In vivo* sun protection factor (SPF). For conventional lotion SPF was found to be 6.39 ± 0.1 where as for novel lotion containing freeze dried aloe powder beads SPF was found to be 13.52 ± 0.21 . It was found that novel lotion containing freeze dried aloe powder beads provides greater sunscreen protection than the conventional lotion. *In vivo* SPF values for novel lotion are higher than the conventional lotion.

KEYWORDS:

Wound Healing Potential of *Musa paradisiaca* L. (Musaceae) stem juice extract formulated into an ointment

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ABSTRACT

Musa paradisiaca L (plantain) stem juice has been shown to possess haemostatic effect. The present work was undertaken with the premise that if the stem juice is able to stop bleeding, then it could have wound healing potential. An ointment containing extract of plantain stem juice (10%) was formulated and tested for wound healing activity in rats using excision wound model. The results indicate that topical application of the formulated ointment significantly ($P < 0.05$) enhanced the rate of wound healing and reduced the epithelization period. The percentage closure of wound area for the ointments of plantain stem juice and silver sulphadoxine were 98.9 ± 0.7 and 100 ± 0.00 , respectively. Epithelization period was drastically reduced from 21.0 ± 1.4 days for the petroleum jelly-treated group to 14.6 ± 0.5 days for silver sulphadoxine-treated group and 16.8 ± 0.8 days for the extract-treated group. In conclusion the study clearly shows the potential of plantain stem juice ointment in wound healing confirming its ethno-medicinal use.

KEYWORDS: Wound healing, excision wound model, *Musa paradisiaca*, epithelization, topical application
