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Short Communication

Formulation of Some Antioxidant Herbal Creams

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Abstract

In this study, creams were formulated based on the antioxidant potential of herbal extracts and evaluated. Different types of herbal creams were formulated from the ethanolic extracts of *Glycyrrhiza glabra* (root and stolons), *Phyllanthus emblica* (fruit), *Lycopersicon esculentum* (fruit), *Curcuma longa* (Rhizomes), *Aloe vera* (leaf) and *Citrus aurantium* (outer peel) namely F1, F2, F3, F4. All the formulations showed good spreadability, good consistency and no evidence of phase separation. From the present study it can be concluded that it is possible to develop creams containing herbal extracts having antioxidant property and can be used as the provision of a barrier to protect skin.

Key words: Herbal cream, Antioxidant, Skin protection.

Cosmetics are the products that are created for application on the body for the purpose of cleansing, beautifying or altering appearance and enhancing the beauty. The market research shows upward trend in the herbal trade with the herbal cosmetic industry playing a major role in fueling this worldwide demand for herbals. The objective of the present work is to evaluate the antioxidant potential of the ethanolic extracts of herbal drugs such as *Glycyrrhiza glabra*(root and stolons), *Phyllanthus emblica* (fruit), *Lycopersicon esculentum* (fruit), *Curcuma longa* (rhizomes), *Aloe vera* (leaf) and *Citrus aurantium* (outer peel). These drugs are used in traditional medicine for various conditions like sun burn, inflammation and as antioxidants. From the literature survey it was revealed that the ethanolic extract of *Phyllanthus emblica*[2], *Curcuma longa*[3] and *Glycyrrhiza glabra*[4], the aqueous extract of *Lycopersicon esculentum*[5] and *Aloe vera*[6] and the methanolic extract of *Citrus aurantium*[7] has very good antioxidant activity. In this study the above extract were prepared and added in different compositions to the formulations. Fresh roots and rhizomes of *Glycyrrhiza glabra*, *Curcuma longa*, Fruits of *Phyllanthus emblica*, *Lycopersicon esculentum*, Leaf of *Aloe vera* and Peels of *Citrus aurantium* were collected from Payangadi, Kannur during the month of March, 2008 and authenticated at Dept. of Botany, Payyannur College, Payyannur, Kannur. The dried drugs were powdered and sieved through No. 10 sieve and used for extraction. Ethanolic extract of *Glycyrrhiza glabra*, *Curcuma longa* and *Phyllanthus emblica*, water extract of *Lycopersicon esculentum* and *Aloe vera* and methanolic extract of *Citrus aurantium* were prepared by soxhelation. The cream base formulations were prepared by adding measured quantity of extracts to the base (water in oil emulsion). The final formulations were prepared after conducting a pilot study. The different concentrations and compositions of the extract were incorporated to the cream base and their consistency, appearance and smoothness were checked before selecting the final formulae. The final formulae selected after pilot study are F-1 contains Citrus aurantium 2ml, Curcuma longa 0.5g, Phyllanthus emblica 0.5g, Lycopersicon esculentum 0.5ml, Aloe Vera 0.5ml; F-2 contains Curcuma longa 2g, Phyllanthus emblica 0.5g, Citrus aurantium 1ml, Glycyrrhiza glabra,1ml; F-3 contains Glycyrrhiza glabra 3ml, Aloe vera 1ml, Lycopersicon esculentum 1ml; F-4 contains Phyllanthus emblica 1g, Citrus aurantium 0.5ml, Glycyrrhiza glabra 0.5ml, Aloe vera 0.5ml, per 10g of base. Evaluation of cream was done the parameters stability studies, spreadability studies, primary skin irritation studies test for microbial growth in formulated creams pH of the formulations, All these formulations showed good spreadability, no phase separation and good consistency during test period. They do not show any signs of edema or skin irritation when applied to the rat abdominal skin and kept in contact for 24 hours. The pH of all the formulations was determined found to be 6.9 to 7.2 and found comparable with the pH of the skin. No significant variation was observed in stability parameters of the formulations like visual appearance,

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phase separation and fragrance six months period of storage. The spreadability study shown that formulation-I has better spreadability, while formulation-II shows least spreadability when compared with the marketed cream. The result of primary skin irritation test indicated that there was no sign of reactions like edema and rashes, thus formulated creams were found to be safe for topical use. The formulated creams were tested for the presence of pathogenic microorganisms by culturing it with Muller Hinton agar medium. There was no signs of microbial growth after 24 hours of incubation at 37^0C and it was comparable with the control. All the formulations showed good physical stability during test period. The Formulation I showed better physical stability and spreadability as compared to other formulations and it is comparable with the marketed cream. All these formulations showed good spreadability, no phase separation and good consistency during test period. They do not show any signs of edema or skin irritation when applied to the rat abdominal skin and kept in contact for 24 hours. From the present study it can be concluded that it is possible to develop creams containing herbal extracts having anti oxidant property and can be used as the provision of a barrier to protect skin.

References

1. Millikan LE, Cosmetology, Cosmetics, Cosmeceuticals: Definitions and Regulations, Clin Dermatol, 19, 4.
2. Bandyopadhay et. al, The role of antioxidant activity of Phyllanthus emblica fruits prevention from indomethacine induced gastric ulcer, Journal of Ethnopharmacology 70(2), 2000 171-176.
3. Selvam R, Subramanian L, The antioxidant activity of Curcuma longa, Journal of Ethnopharmacology, 47(2), 1995, 59-67,.
4. Chin Y.W et.al, Antioxidant constituents of the roots and stolons of licorice, J. Agric Food. Chem. 13:55(12): 2007, 4691-4697, 2007.
5. Giuseppe Strazzullo et.al, Antioxidant activity of lycopene contents in different cultivars of Tomato, International Journal of food properties , 10(2), 2007, 321-329,.
6. Yun Hu et.al, Evaluation of Antioxidant Potential of Aloe vera extract, J. Agric. Food. Chem., 51(26) 2003, 7788-7791,
7. Kokate C K, Purohit A P, Gokhale SB. Pharmacognosy 24th ed. Nirali Prakashan, 2004.
8. Reddy B.S.N and Shantharaman R, Comparative evaluation of topical corticosteroid creams, Indian Journal of Dermatol Venero l Leprol, 58, 1992, 23-24,
9. Manish P, Patel MM, Formulation and evaluation of drug free patches for transdermal application, The Indian Pharmacist, 6, 2008, 95-99.
10. Saeed S, Tariq P. "Antibacterial activities of Emblica officinalis and Coriandrum sativum against Gram negative urinary pathogens." Pak J Pharm Sci. Jan; 20(1), 2007, 32-5.
11. Murthy N, Hiremath SR, Preformulation studies of sodium carboxy methyl guar transdermal films, Int: J. Pharma. Excipients (2) , 2001, 8-11.
12. Ahmad I, Mehmood Z, et al. Screening of some Indian medicinal plants for their antimicrobial properties. Journal of Ethno Pharmacology 62(2), 1998, 183-193.
13. Patricia Maria et al. Moisturizing effect of cosmetic formulations containing Aloe vera extract in different concentrations assessed by skin bioengineering technique. International Journal of Dermatology, 30. (10) 2004, 679-683.