

Formulation and Evaluation of Mango Butter Based Cosmeceuticals For Dermatological Use

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Abstract

Cosmeceuticals are topical pharmaceutical-cosmetic hybrids intended to enhance the skin care. Formulations of Mango butter were developed as a topical cream for effective dermatological care. These formulations were prepared using neutralized and bleached mango fats and mango stearine fraction. Suitable excipients were added to these formulations. These prepared formulations were evaluated for various qualitative and quantitative tests like pH, loss on drying, acid value, saponification value etc. The results obtained from these tests were complied with the pharmacopoeial standards.

Key Words: Mango butter, topical cream, effective skin care.

Introduction

Cosmeceuticals as effective skin care:

Cosmeceuticals are topical pharmaceutical-cosmetic hybrids intended to enhance the skin care through ingredients which provide various health related benefits. Cosmeceutical agents possess various desirable attributes such as safety, efficacy, formulation stability, effective metabolism within the skin and cost reduction of the formulation. Skin is the largest organ in the body which separates and protects the internal environment of the body from external environment. External environmental factors like air pollution, exposure to radiation from the sun, and normal process of aging causes damage to integral components of skin like DNA, collagen and cellular membranes. Various cosmeceuticals used for skin care improve the functioning and texture of the skin by enhancing collagen growth, maintaining the keratinized structure of the skin layer and providing healthier skin. Cosmeceuticals can provide valuable tools for effectively nurturing and nourishing the skin. Various formulations of cosmeceuticals can be formulated to ensure effective skin care.

Exotic fatty butter based cosmeceuticals:

Present study reveals the scope and utilities of exotic fatty butter based cosmeceuticals as potential therapeutic drug delivery systems for dermatological use. Various exotic fatty acid butters like Mango fats obtained by de-shelling and pressing fruit kernels show excellent bioactive properties like wound healing, antiseptic, bacte-

ricidal and bacteriostatic, antimicrobial, and anti-inflammatory activities. These speciality fats mainly consist of phytosterols, tocopherols, terpenoids, and fatty acids like oleic, palmitic, linoleic, lauric and stearic acids. Exotic or speciality fats show excellent emollience and bioactive properties and they are immensely effective in providing excellent skin care.

Material and Methods

Materials required:

Neutralized and bleached mango butter and mango stearine fraction was obtained as a gift sample from Charbhujia foods private limited Hingna M.I.D.C. Nagpur. Castor oil, Beeswax, Liquid paraffin and distilled water were used in the formulation of creams for dermatological use.

Experimental work:

Preparation of dermatological formulations:

Formulations A-1, A-2, and A-3 of creams were prepared. These formulations respectively consists of 5%, 10% and 15% mango butter w/w. The oil phase consists of Mango butter which was obtained from dried kernels of *Mangifera indica* belonging to the family Anacardiaceae. Oil phase also consists of castor oil, Bees wax and liquid paraffin. Methyl paraben and propyl paraben were used as preservatives and added to the aqueous phase by solubilising in the distilled water. Both the oil phase and aqueous phase were heated to 75 degrees centigrade and were mixed slowly with continuous stirring, until the semisolid preparations were formed.

Evaluation of dermatological formulations:

Prepared formulations were evaluated for various qualitative and quantitative tests like pH, loss on drying, acid value, and saponification value. The results of these tests are summarized in the table given below:

Results and discussion

After formulation development, the prepared creams were subjected for various evaluation tests. The results obtained from all of the above tests were complied with the pharmacopoeial standards. Developed formulations of mango butter have high tendency to treat various skin diseases and to provide effective topical dermatological care.

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Formulation code	pH	Loss on drying	Acid value	Saponification value
A-1	5.6	40%	0.9312	112.5
A-2	5.8	45%	0.9881	114.2
A-3	5.9	45%	0.9702	116.3
Standard values for creams	5-6	40-50%	NMT-2	111.0-117.5

Acknowledgements

The author is thankful to his research supervisor Dr. D.D. Wasule, Associate Professor, L.A.D. and S.R.P. college Seminary Hills Nagpur for his valuable guidance for this research work.

The author is also thankful to Dr. A.M. Itadwar, Principal, Guru Nanak college of pharmacy, Nari, Nagpur and Jawaharlal Nehru technological university Hyderabad for providing necessary platform required for this research work.

References

- Dureja, H., Kaushik, D., Gupta, M., Kumar, V., Lather, V., 'Cosmeceuticals an emerging concept', Indian journal of Pharmacology, 37(3), 2005, 155-159
- Mandawgade, S.D., Patrawale, V.B., 'Formulation and evaluation of exotic fat based cosmeceuticals for skin repair', Indian J. Pharm. sci., 2008, 70(4), 539-542
- Faunce, T.A., 'New challenges for safety and cost effectiveness regulation in Australia'. MJA, 186(4), 2007, 189-191
- Pawar, P., Karpe, P., Jadhav, P., Alkunte, A., Patil, S.M., Pre-formulation and evaluation of herbo-mineral ointment and cream, RJTCS, 2010, 1(1), 30-32
- Siti Salwa Abd Gani et al, Characterization and effect of skin Hydration of Engkabang based emulsions, Biosci. Biotechnol. Biochem. 2010, 74(6), 1188-1193
- Siti Salwa Abd Gani et al., 'Engkabang esters for cosmeceutical formulations', J. Surfact Deterg, (2011), 14:227-233
- Eichie, F., Isesele, J., Egharegbemi, R., 'A comparative study of physicochemical characteristics of certain Fatty bases in topical formulation', Int j health Res., December 2010, 3(4), 228
- Yam, Y.S., Kim, J.W., Han, S.H., Chang, I.S., 'Poly(acrylate co-vinyl acetate) Adhesive patch for sustained dermal delivery of Vitamin A', Int. J. Ind. Eng. Chem., 9(2), 2003, 153-158
- USmani, G., Patil, H., 'Lipase Catalyzed interesterification for the production of oleochemicals' from nontraditional oils. Rasayan j. Chem., 3(2), 2010, 354-358
- Jain, A., Gautam, S., Gupta, Y., Khambete, H., Jain, S., 'Development and characterization of ketoconazole emulgel for topical drug delivery', Der pharmacia sinica, 2010, 1(3), 221-231
- Magdy, I.M., 'Optimisation of Chlorphenesin Emulgel formulation'. AAPS, 2004. 6(3), Article 26