Preparation of Niosome Encapsulated Alpha-mangostin in Cosmetic.

WILAISRI LIMPHAPAYOM

Department of Agriculture,Bangkok, THAILAND.

Email: L9willie@hotmail.com

Abstract.

Niosome of alpha-mangostin was prepared by encapsulation in a mixture of tween 60, cholesterol and ethanol by thin film hydration method. Investigation have been made as bioactive vesicle in cosmetic.Alpha-mangostin is the most abundant in xanthone , derived from the ethanolic extraction of mangosteen fruit rinds.The Xanthone has demonstrated antioxidant, antibacterial, anti-inflammatory activities , and the ability to induce cancer cell. The suitable alpha-mangostin niosome formulation in this study was composed of 1:50 ratio were prepared by dissolving cholesterol (500 mg) and tween 60 (2000 mg) in 10 ml. ethanol. The mixture was dried by rotary evaporation and subjected vacuum desiccation for 3-5 hours to generated the dried thin film.The niosome have been made for moisturizing cream. For moisturizing serum, alpha-mangostin nanoemulsion containing coconut oil, nanoemulsion were prepared by a modified thin-film hydration method at room temperature. The emulsions consisted of 10% coconut oil, 2% alpha mangostin,10% cholesterol and 40% tween 60 and made up to 100% ethanol. The mixture were homoginized and dried by rotary evaporation then subjected to vacuum desiccation for 3-5 hours to generated the dried thin film. The prepared alpha-mangostin nanoemulsion were evaluated regarding particle size, alpha-mangostin concentration. The mean particle size of the niosome was approximately 500 nanometer.The skin permeation of alpha-mangostin niosome from cream and serum formulation were also investigated in comparison with the alpha-mangostin ethanolic solution, using Franz diffusion cell with polyethersulfone ultrafiltration membrane as a model membrane.It was found that the alpha-mangostin niosome release of 10-40% over a period of 24 hour. Niosome alpha-mangostin provided economical and chemically stable as they were not easily hydrolysed or oxidized during storage.This delivery system can be modified to provide or controlled enhancing efficacy for prolonged in cosmetic.

.