ABSTRACT

RELEASE OF PROTEIN (OVALBUMIN) IN W/O MICROEMULSION
(Surfactant (Span 80-Tween 80) and Cosurfactant (Ethanol, Isopropyl Alcohol, Propanol) Ratio = 4 : 1)

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Nowadays, protein is utilized for topical immunization while w/o microemulsion is one of effective drug deliveries. The objective of this study was to develop ovalbumin microemulsion for enhanced topical and transdermal delivery and investigate the effects of different cosurfactants on its release. Various cosurfactants (ethanol, isopropyl alcohol, and propanol) along with surfactant-cosurfactant mixtures in ratio of 4:1 (Smix) were selected. Microemulsions each containing 0.1 % ovalbumin were prepared and compared for their release to determine the effects of cosurfactants. Release test used Franz diffusion cell with aquabidestilata in 32 ± 0.5°C as media. As results, the Area Under Curve (AUC) cumulative amounts of released ovalbumin from w/o microemulsion with cosurfactants ethanol, isopropyl alcohol, and propanol consecutively were 4745.1186 ± 1652.1690 µg/cm², 4799.0686 ± 2009.6538 µg/cm², and 1666.4400 ± 548.1862 µg/cm². Statistical analysis using ANOVA one way with α = 0.05% obtained that there was no significant difference between each formula.

Keyword(s) : ovalbumin, w/o microemulsion, release, Franz diffusion cell, cosurfactant