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SYNTHESIS, CHARACTERIZATION AND *IN VITRO* RELEASE OF CAFFEIC ACID LOADED LIPOSOMES

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Caffeic acid is an antioxidant organic compound which is a key intermediate in the biosynthesis of lignin. Inclusion of antioxidants in skin creams has a greater potential for protecting the skin against UV-mediated oxidative damage. However, it is important that the antioxidants permeate through the stratum corneum for maximum effect. Our effort was to successfully encapsulate the caffeic acid in nanoscaled liposomes to achieve a slow release. Liposomes are small artificial spherically shaped vesicles manufactured from cholesterol and natural non toxic phospholipids and are extensively used in drug, cosmetic and food industries. Liposomes offer a promising system for drug delivery due to their size and amphipathic nature. Main components of liposomes have both hydrophilic and hydrophobic nature and they form closed vesicles with either one or more phospholipid bilayer membranes. So these liposomes can transport aqueous or lipid drugs depending on the nature of the drug. Liposomes composed of cholesterol and egg yolk lecithin were prepared by reverse-phase evaporation technique. Characterization using particle size analyzer, optical microscope and scanning electron microscope indicated a particle size distribution of 70-100 nm with a -50 mV zeta potential. The encapsulation efficiency was around 30% and it was determined by UV-Visible spectrophotometer. The release of caffeic acid from liposomes reached a plateau after 6 hours with 70% release in phosphate buffered saline solution with pH of 7.4.

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