

Independent Study Title	Effect of Chitosan on the Stability of Ferulic Acid Entrapped Liposome
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ABSTRACT

This study intended to prolong the stability of liposome with chitosan. Containing positive charges from ammonium groups of its structure, chitosan can easily self-assemble with negatively charge liposome. Ferulic acid, a heat and light sensitive ingredient with several benefits for aesthetic purposes, e.g. sunscreens agent, whitening and antioxidant was chosen to be entrapped. Applied simple hand-shaking method was established with 65.52% entrapment efficiency and 94.38% yield recovery determined by spectrophotometry at maximum wavelength of 316 nm. Temperature controlling sonication system improved entrapment efficiency for 10.28%. The diameter of normal liposome significantly expanded when the temperature and storage time increased as well as the leakage of ferulic acid. Coating with chitosan prolonged the stability of ferulic acid in liposome and delayed the loss of ferulic acid in high temperature. Chitosan coated liposome had capability to maintain vesicle size and internal active ingredient content for a month.

Keywords: Chitosan/Ferulic acid/Liposome/Stability