

Study on Polymerized Phospholipid Liposomes as a Drug Delivery System for Skin

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Liposomes composed of polymerized phospholipids possess enormous stabilities against mechanical stress, detergents, long term storage, and phospholipases, and are one of the potential candidates for usage as a skin-drug delivery system (DDS). Formation profile of the polymerized phospholipids derived from 1,2-bis (2,4-octadecadienoyl)-sn-glycero-3-phosphocholine was first described, and their molecular weight was estimated. Stability of the liposome structure was demonstrated by the addition test of detergent such as Triton X-100. Viscosity of the liposome solution coexisted with watersoluble polymers provided its rheological characteristics. Encapsulation efficiency by the liposome was studied in the view point of concentration of encapsulated material and lamellarity of the liposome by using hemoglobin as an example. The encapsulation profile was also influenced by pH and ionic strength of the solution. The liposomes could be freeze-dried with a small amount of sugar, suggesting that the liposome would be utilized as dry powder for skin-DDS.