Nano-sized Liposomes via SPG Membrane Emulsification Technique

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Liposomes have been extensively investigated as carriers for a variety of drugs and contrast agents. Liposomes are usually injected intravenously for systemic applications. We prepared nano-sized liposmes (NSL) using shirasu porous glass (SPG) emulsification for bio-imaging and cancer chemotheraphy. NSLs were prepared by the thin film cast-hydration method and were permeated through SPG membrane. Structures and sizes of NSLs were confirmed by cryo-TEM and DLS. Thermal properties of varying liposome sizes was characterized by DSC. The time it took liposomes to pass through the SPG membrane was measured at varying pressure, and liposome size was measured with SPG membrane pass number to confirm correlation of SPG membrane and lipid layer of liposomes.