Physicochemical characterization and cytotoxic studies of nonionic surfactant vesicles using sucrose esters as oral delivery systems

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Several nanotechnological solutions for mucosal immunization have been proposed, such as nanoparticles, liposomes, solid lipidic particles, micelles, and surfactant vesicles. In recent years, surfactant vesicles have gained increasing scientific attention as an alternative potential drug delivery system to the conventional liposome. This type of vesicle known as niosomes or nonionic surfactant vesicles (NSVs) has a structure and properties similar to those of liposomes. Both of them can transport hydrophilic drugs by encapsulation in the aqueous inner pool or hydrophobic drugs by intercalation into hydrophobic domains. The aim of this study was to prepare and characterize vesicles formed by sucrose esters as protective systems of bioactive molecules for oral administration. Vesicles were prepared using two commercial products formed by mixtures of mono and diesters S-570 and S-770, respectively. Determined parameters were size and zeta potential; the stability of formulations was teste