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## Enacapsulation and characterization of Persian pseudocerastes persicus venom in nanoliposome

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**P**roduction of anti-venom or antidote requires immunization of large mammals such as horses and sheeps repeatedly to produce immunoglobulin (IgG) which purified from the sera. In this operation as snake venom contains a variety of enzymes injected into the animal; this method can greatly injured the animal, so the use of carriers that can provide the least amount of venom could be safer for immunization. In this study, nanoliposome has been used to encapsulate Persian Pseudocerastes Persicus venom. We provided two liposomal formulations with two different concentrations 20mM and 40mM, including DSPC/DSPG/Chol (15:2:3) and DDAB/Chol (4:3) to encapsulate the venom. The size of the formulations and zeta potential were investigated. Meanwhile, the encapsulation efficiency, the percentage of venom release and phospholipase activity was also studied. The obtained results showed increasing the size and bandwidth in DSPC/DSPG/Chol formulation which can be the result of venom phospholipase activity in this structure. The size of 20mM DDAB/Chol formulation was more stable in all three repetitions. The charges of the particles varied from -6 to -12mV. DDAB/Chol charges were -6 and -7/8 mV and DSPC/DSPG/Chol charges were -11/5 and -12/8 mV. The encapsulation efficiency of 20mM DDAB/Chol was %70 which showed more confinement of other structures, the percentage release of the venom showed a steady state profile. This formulation showed loss of phospholipase activity which could be the result of bromide functional group in this structure that could be more efficient of animal immunization.

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