

Stimulating Role of Toxoids-laden Liposomes in Oral Immunization against Diphtheria and Tetanus Infections

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Summary: Liposomes have been produced by injection an ether solution of a mixture of lecthin and chloesterol into a diluted solution of prewarmed diphteria and tetanus toxoids followed by elimination of the stream of ether vapor by vacuum.

In a preliminary study, adjuvant effects of liposomes on the systemic and mucosal immune response have been studied. When a mixture of diphteria toxoid (DT) and tetanus toxoid (TT) entrapped in liposomes were administered parenterally or orally in rabbit, a significant rise of specific antibodies against both toxoids was noticed. In monkeys receiving a mixture of DT and TT entrapped in liposomes orally, the antibody response after two and three ingestion of this product was mild but when liposomes containing toxoids were adsorbed with aluminium hydroxide in a similar experiment, a significant rise in the specific antibody response in monkey against both toxoids was recorded. Adult volunteers, similarly receiving a mixture of DT and TT, entrapped in liposomes and adsorbed with aluminium hydroxide have shown a significant rise in specific circulating antitoxins. In order to compare the efficacy of this technique of human oral immunization with the previous method, whereby a plant medicinal seca (LRS) was used as adjuvant in oral immunization of man, a second group of volunteers were simultaneously and similarly treated as suggested previously. The comparative results are discussed in the present report.

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