The Intranasal Vaccination Using Biodegradable Nanoparticles

김범길, 강익중*
경원대학교 화학공학과
(ijkang@kyungwon.ac.kr*)

World-wide, about a million death occur each year due to chronic of the hepatitis B. And the most important mode of Hepatitis B Virus transmission globally is perinatal, from the mother to her newborn baby. This intramuscular vaccination accompanies patient's pain and is uncomfortable, and more serious to newborn baby. Chitosan, non-toxic and biodegradable polyanion is obtained by deacetylation of chitin which is produced in shell of crustacean. In this study, chitosan nanoparticles were synthesized by ionic cross-linking gelation and then complex with hepatitis type B virus surface antigen(Hbs-Ag) for the vaccination. its approximately range was from 100nm to 150nm, and surface charge density was +60mV. The drug transport efficiency through the thigh muscle and nasal cavity was demonstrated *in vivo* test of SD rats. Results of intramuscular administrations confirmed its ability of chitosan nanoparticles as Drug adsorbent such as aluminum hydroxide gel. Characteristics of nanoparticles were examined by ELS(electrophorestic light scattering), TEM(Transmission Electron microscope), FT-IR(Fourier transform - infrared).