

## Drug Carrier Using Biodegradable Nanoparticles

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Hepatitis type B is a serious and common inspective disease of liver, affecting millions of people throughout the world. All of the infants have to be prescribed by three consecutive injection of hepatitis vaccine just after his born. However, adult needs inoculation of 2 ~ 3 times if there is no antibody. This intramuscular vaccination accompanies patient's pain and is uncomfortable, and this is more serious to newborn baby. Chitosan, non-toxic, high adherence 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 attached hepatitis type B virus surface antigen(Hbs-Ag) for the vaccination. Modulated particle has 100~400nm size and nearly 60mV surface charge density. The drug transport efficiency through the intramuscular and nasal cavity were demonstrated on *in vivo* test with SD rats. Characteristics of nanoparticles were examined by ELS(Electrophoretic Light Scattering), SEM(Scanning Electron Microscope), AFM(Atomic Force Microscope).