

Effect of intranasal hepatitis B vaccination using chitosan nanoparticles

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30% percentage of world population has Hepatitis type B disease and is infected by chronic hepatitis type B. All of the infants have to be prescribed by three consecutive injection of hepatitis vaccine just after his born. This intramuscular vaccination accompanies patient's pain and is uncomfortable, and more serious to newborn baby. Nasal vaccination may prove to be a good alternative to parenteral injection because of the simplicity of drug permeation and the ease of vaccine administration. 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 gelation and then attached RGVP(Recombinant gene vaccine protein) for the vaccination. The size distribution of Chitosan-vaccine nanoparticles was approximately 200-400 nm, and Surface charge was 55~60 mV. The drug transport efficiency through the intramuscular and nasal cavity was demonstrated *in vivo* test of SD rats.