

## **Fabrication and properties of chitosan-gold & silver nano-composites for drug delivery carrier**

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Gold and silver are as useful nano-materials which has attracted a lot of attention. When gold and silver are coated as nano-composites and inflicted by energy from outside, the nano-composites generate heat and emit drugs that are absorbed inside. Drug delivery system's purpose is the efficient delivery of the drug to the desired site by maximizing the therapeutic effect. So the role and property of drug delivery carrier which transfer drugs to the target cells are very important. Chitosan as a hydrophilic natural polymer is a biocompatible, biodegradable, and suitable for drug delivery carrier. Recently, worldwide studies are focused on chitosan because chitosan have many useful properties. Chitosan can be obtained by deacetylation of chitin (N-acetyl-D-glucosamine) derived from shellfish. Because of amine group, chitosan has positive charge in acid solution, so which can easily be reacted with opposite charged metal nanoparticles. In this study, we could find the optimal fabrication conditions of chitosan-gold & -silver nano-composites as an effective drug carrier as a function of concentration of substrate, reducing agent, and pH. SEM and TEM were used to the morphology analysis of chitosan-gold & -silver nano-composites. The particle sizes of nano-composites were measured by DLS. Their absorbance properties were investigated by using UV spectroscopy. Zeta potentials of chitosan-gold & -silver nano-composites were measured by ELS.

### **Biography**

Yong Choon Lee has graduated from Gachon-University and studied on drug delivery system as a master candidate because he is interested in biochemical engineering since he was a middle school student. Ik-Joong Kang has completed his Ph.D. in chemical engineering from Korea University in 1989 and postdoctoral studies from University of Washington. He is a professor at Gachon-University in Korea from 1991. Dr. Kang's major research interests are drug delivery system using biodegradable materials and its application to medicine.

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