

Facile synthesis of biocompatible metal nanoparticles *via* phase transfer이영재, 장정우, 강태욱<sup>†</sup>

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Liposome-based metal nanoparticles have attracted much attention due to their biocompatibility and endocytosis efficiency for *in vivo* applications. Thin lipid film hydration is widely used to encapsulate metal nanoparticles with lipid bilayers. However, this method suffers from poor yield because the probability for the encapsulation is generally low. Here we propose the phase transfer-mediated synthesis of biocompatible lipid-coated metal nanoparticles. First, polyethylene glycol modified gold nanoparticles are transferred from an aqueous solution to chloroform in which aliphatic molecules (*e.g.*, 1-dodecanethiol or oleylamine) are dissolved. Then, the gold nanoparticles are separated by centrifugation, followed by the addition of lipids in chloroform. By sonication with water, lipid molecules are assembled onto the surface of the nanoparticles through hydrophobic interaction. As-synthesized hybrid nanoparticles are characterized by transmission electron microscopy (TEM), dark-field microscopy and UV-vis spectrophotometer.