

### FITC-doped silica nanoparticles with HIV-1 TAT peptide for cell imaging and siRNA delivery

장혜미, 강소라, 김희석, 오병근\*  
서강대학교  
(bkoh@sogang.ac.kr\*)

In this study, we synthesized a probe for small interfering RNA delivery and cell imaging using APTS coated silica nanoparticles, modified with Fluorescein isothiocyanate (FITC)-doped and cell-penetrating peptides. To investigate the particle size effect on cell imaging, the cellular uptake of various sizes of unmodified SiNPs and TAT-SiNPs by HeLa cells was examined by flow cytometry and confocal microscope. The result show that TAT conjugated silica nanoparticles were internalized by red fluorescent protein stable HeLa cells and distributed the cytoplasm and around the nucleus, but did not penetrate the nucleus. Acknowledgments : This research was supported by National Nuclear R&D Program through the National Research Foundation of Korea(NRF) funded by the Ministry of Education, Science and Technology (No. 2010-0018194) and by Basic Science Research Program through the National Research Foundation of Korea(NRF) funded by the Ministry of Education, Science and Technology (No. 2010-0015488). And this research is financially supported by the Ministry of Knowledge Economy(MKE) and Korea Institute for Advancement in Technology (KIAT) through the Workforce Development Program in Strategic