

## Study of Cellular Uptake and In Vivo Tumor Accumulation of PLGA-Based Nanoparticles with Functionalized Surface Hydrogel Layers

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The PLGA nanoparticles with chitosan- or heparin-functionalized surface hydrogel layers were prepared to overcome their intrinsic limitation of relatively low tumor accumulation. Both bare control and the functionalized nanoparticles had serum stability and negligible cytotoxicity to normal and tumor cells. However, the markedly enhanced cell uptake and in vivo tumor accumulation were observed by the functionalized nanoparticles, compared to control. These results show the evidence of a positive effect of the surface functionalization of nanoparticle on in vivo tumor accumulation for the case of a hard, PLGA nanoparticle system, which could be strongly related with an improved intracellular uptake. \*\*\*This research was partially supported by Basic Science Research Program through the National Research Foundation of Korea (NRF) funded by the Ministry of Education, Science and Technology (MEST) of Korea (R15-2008-006-02002-0), and by the World Class University (WCU) program at GIST through a grant provided by MEST, Korea (R31-2008-000-10026-0).