Synthesis and Characterization of Thermo-Sensitive Pluronic-Based Nano-Carriers for Tumor Targeting

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Thermo-sensitive Pluronic-based nano-carriers(NCs) were designed for targeting tumors. Bare forms of there NCs consisted of Pluronic F 68 or F 127, whereas chitosan-conjugated forms consisted of Chito-NC 68 or Chito-NC 127. The NCs did not cause any cytotoxicity when cultured with normal NIH3T3 fibroblasts or tumor SCC7 cells. The *in-vivo* accumulation of there NCs in tumors was optically monitored using Cy5.5-modified NCs in SCC7 tumor-bearing mice. Higher accumulation of chitosan-modified NCs was seen compared to the bare NCs forms. Even though the bare NCs accumulated well in the tumor site, they were rapidly excreted. Therefore, we believe that conjugation of Pluronic-based NCs with chitosan plays a significant role in effective targeting of tumors. Acknowledgement : This research was supported by Basic Science research Program through the NRF of Korea founded by the MEST of Korea (R15-2008-006-02002-0), and by the WCU program at GIST through a grant provided by MEST, Korea (R31-2008-000-10026-0).