

Abstract Submitted
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Enhancement of In Vivo Anticancer Effect of Cisplatin by Incorporation Inside Carbon Nanohorns MASAKO YUDASAKA, AIST, KUMIKO AJIMA, JST, TATSUYA MURAKAMI, YOSHIKAZU MIZOGUCHI, KUNIHITO TSUCHIDA, Fujita Health Univ., TOSHINARI ICHIHASHI, NEC, SUMIO IIJIMA, JST, NEC, AIST, Meijo Univ. — We have been studying potential applications of single-wall carbon nanohorns (SWNHs) to drug delivery systems. SWNHs are multiply functionalized with proteins, magnetites, tumor targeting molecules, and others. Various drugs are easily incorporated, and the incorporated drugs are slowly released. Almost no acute toxicity of SWNHs was found through various animal tests. We show in this report that anticancer effect of cisplatin was enhanced by incorporation inside SWNHs (CDDP@SWNH) as evidenced by in vivo tests: CDDP@SWNH was locally injected to tumors subcutaneously transplanted on mice. CDDP@SWNH inhibited the tumor growth more effectively than CDDP. This anticancer enhancement was achieved by large CDDP-quantity incorporated inside SWNH, slow release of CDDP from SWNH, long-term stay of SWNHs at the tumor sites, and an anticancer effect of SWNH itself [1].

[1] K. Ajima et al. ACSNano, 10(2008)2057-2064.

Masako Yudasaka
AIST

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