metastasis

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The antimetastatic effect of BCG-CWS, which was emulsified in an oil-in-water form with either Drakeol 6VR mineral oil (BCG-CWS/DK) or squalane (BCG-CWS/SQA), on lung metastasis produced by highly metastatic murine tumor cells, Colon26-M3.1 carcinoma cells and B16-BL6 melanoma cells, was investigated in syngeneic mice. An intravenous administration of BCG-CWS (100 mg/mouse) 1 day after tumor inoculation significantly inhibited tumor metastasis of both Colon26-M3.1 carcinoma and B16-BL6 melanoma cells in experimental lung metastasis models. BCG-CWS/SQA administered through subcutaneous route was shown to be effective only when it was consecutively injected (3 times) after tumor inoculation. A single i.v. administration of BCG-CWS/SQA inhibited the number of tumor-induced blood vessels and suppressed tumor growth. Furthermore, the multiple administration of BCG-CWS/SQA given at on week intervals led to a significant reduction in spontaneous lung metastasis of B16-BL6 melanoma cells in a spontaneous metastasis model. These results suggest that BCG-CWS emulsified with squalane is a potent inhibitory agent of lung metastasis through the suppression of tumor growth and the inhibition of tumor-induced angiogenesis.

[PA2-4] [10/18/2002 (Fri) 09:30 - 12:30 / Hall C]

non-viral gene delivery mediated by chitosan and PEI : developement of a gene carrier with serum stability and reduced cytotoxicity

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The purpose of this study was to develop PEI-based gene carriers with optimal serum stability and reduced cytotoxicity. PEI is an efficient gene transfer agent with the ability of DNA condensation and endosome escape; however, use of the polymer in vivo is hampered by signigicant reduction in transfection activity by the presence of serum. Chitosan is a non-toxic, biodegradable and biocompatible polymer with hydrophilic functional groups so it may provide a physical stability against challenge by serum proteins. To prepare a PEI-based polyplex formulation with increased serum stability we added chitosan to PEI/DNA complex. In this report, we show that the level of gene expression mediated by PEI/DNA complex can be significantly improved by the addition of chitosan in the presence of high serum concentration. In addition, cells transfected with DNA/PEI/chitosan complex remained 70~80% viable whereas the viability of PEI-treated cells ranged at 50~60%. The chitosan-modified DNA/PEI complex may provide an improved use for in-vivo gene delivery.

[PA2-5] [10/18/2002 (Fri) 09:30 - 12:30 / Hall C]

Examination of alginate/PEI/DNA polyplex as a gene delivery system: enhancing transfection efficiency in the presence of serum and reducing cytotoxicity

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Synthetic vectors have been considered as a safer and more versatile alternative to viral-based gene delivery systems. A variety of simple synthetic vector systems such as cationic lipid- and polymer-complexed plasmid DNA were shown to have a significant transfection activity in vitro but their use in