[PA2-1] [10/18/2002 (Fri) 09:30 - 12:30 / Hall C]

Histoculture drug response assay in Human colorectal cancer patients of novel Pt(IV) complex, K101 and nephrotoxicity test in ICR mice renal proximal tubular cells

Kwon Young-Ee°*, Lee HwaJung*, Kang JeongHo*, Kim KukHwan**, Kim WonKyu$, No YiRan#, Kim MoonBo#

Drug Discovery Institute STC Life Science Center*, College of Pharmacy Dongduk Women's University**; College of Medicine Hanyang University$; MetaBio Resrearch Center#

It is well known that cisplatin, one of chemotherapeutic agents, induces DNA damage and kill cancer cells mainly by apoptosis. We recently synthesized a novel Pt(IV)-based anticancer agent, trans,cis-Pt(acetato)2Cl2(1,4-butanediamine) (K101) with octahedral structure. To evaluate antitumor activity about human cancer of K101, we have performed histoculture drug response assay in 35 cases of colorectal cancer patients. Nephrotoxicity test was examined by biochemical assay and observed ultrastructural changes in renal proximal tubular cells by TEM. In histoculture drug response assay, K101 (20 microM) was shown about 54.7 % inhibition comparing with cisplatin (about 24 % in 10 microM). Serum levels of BUN, creatinine and uric acid in K101 administrated mice were not elevated. The ultrastructure of K101 administrated mice was less change than cisplatin administrated mice. The present study suggests that newly synthesized Pt(IV) complex, K101 was shown to be more effective than cisplatin against various antitumor tests. K101 has less renal toxicity than cisplatin.

[PA2-2] [10/18/2002 (Fri) 09:30 - 12:30 / Hall C]

Effect of oral administration of Ginsenoside-Rb2 on rotavirus infection

1Yoo Yung-Choon°, 2Lee Kyung-Bok

1 Department of Microbiology, 2 Department of Biochemistry, College of Medicine, Konyang University

Glycosaminoglycans(PT-Gag) were isolated from the porcine testis. From the PT-Gag, we obtained two different types of Gag fractions using Dowex macroporous Resin MSA-1 column, PT-Gag-1.5% NaCl and PT-Gag-16% NaCl. Various biological activities of the GAGs were examined in aspect of anticoagulant and immunomodulating activity. The anticoagulant activity of the GAGs was evaluated by activated partial thromboplastin time (aPTT) assay and thrombin time (TT) assay. The GAGs of porcine testis markedly increased the clotting times of both of aPTT and TT, showing that PT-Gag-16% NaCl was more effective than PT-Gag-1.5% NaCl. The immunomodulating activity of the GAGs was examined in relation to regulation of cytokine production of murine peritoneal macrophages. Treatment with the GAGs promonently enhanced the production of cytokines, IFN-γand TNF-α, from macrophages. Taken together, GAGs isolated from porcine testis possess biological functions such as anticoagulant and immunomodulating activity.

[PA2-3] [10/18/2002 (Fri) 09:30 - 12:30 / Hall C]

Administration of BCG-CWS in oil-in-water emulsion inhibits tumor growth and

metastasis

1Yoo Yung-Choon°, 2Lee Kyung-Bok

1 Department of Microbiology, 2 Department of Biochemistry, College of Medicine, Konyang University

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

Kim Mi Na°, Min Sang Hyun, Jiang Ge, Chung Kyeong-soo, Yeom Young Il

Korea Reserch Institute of Bioscience and Biotechnology

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

Jiang Ge°, Min SangHyun, Kim MiNa, Lee DongChul, Lim MiJung, Yeom YoungII.

Korea Research Institute of Bioscience and Biotechnology

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