

(vitamin C) and reduced glutathione (GSH). Quercetin were used 12,5, 25, 50, 100mM concentration. From this result The antioxidant enzyme activity of quercetin in the presence of vitamin E was stronger than GSH or vitamin C, in addition, the same treatments decreased intracellular reactive oxygen intermediate levels in B16F10 melanoma cells. Taken together, these result demonstrate that the antioxidant effect of quercetin can enhance in the presence of different antioxidant and it might play an important role in anti-tumor effect.

[PC2-1] [2003-10-10 09:00 - 13:00 / Grand Ballroom Pre-function]

Expression and Characterization of ATP-binding-cassette(ABC) Transporter in Cephaciacin Biosynthesis Gene Cluster of *Lysobacter lactamgenus*

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In order to confirm the biological function of ORF10 in cephalosporin biosynthesis gene cluster of *Lysobacter lactamgenus* as an ATP-binding-cassette (ABC) transporter, the gene for ORF10 was amplified and subcloned into pET-28a(+) expression vector. After gene induction with 0.5 mM IPTG at 30 °C and further cultivation at 30 °C for 8 hr, a lot of the recombinant ORF10 protein was produced as soluble form in cytoplasmic fraction as well as a membrane protein in the membrane fraction as likely as other ABC transporters. The membrane fraction of recombinant *E. coli* cells was separated by ultracentrifugation, and solubilized using 2.5% octyl- β -D-glucoside. The ORF10 protein was then purified from the solubilized membrane proteins through nickel affinity column chromatography. Because enough amount of ORF10 as a pure form was not obtained, the comparative analysis of biological activity was next done using membrane proteins of recombinant *E. coli* cells and host cells. For the accurate analysis, the artificial liposomes were reconstituted by octyl- β -D-glucoside dilution method. The generated liposomes about 2 μ m were tested for ATPase activity and substrate specificity. The artificial liposome made from recombinant *E. coli* membrane proteins showed slightly higher activity than that from host *E. coli* membrane proteins. In the measurement of membrane transport activity, the reconstituted liposome of recombinant *E. coli* membrane proteins exhibited a significantly high activity on cephalosporin C, a part of cephem nucleus of cephalosporin, but not on Ala-Ser, an oligopeptide side chain of cephalosporin. Further, slightly higher activity was observed in this liposome when both substrates of cephalosporin C and Ala-Ser were treated than when cephalosporin C alone.

[PC2-2] [2003-10-10 09:00 - 13:00 / Grand Ballroom Pre-function]

Cytotoxicity of Compound K and Ginsenoside R_{b2} against some tumor cells

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When ginsenoside R_{b1} and R_{b2} were anaerobically incubated with human fecal microflora, these ginsenosides were metabolized to compound K. When ginsenoside R_{g3} was anaerobically incubated with human fecal microflora, the ginsenoside R_{g3} was metabolized it to ginsenoside R_{b2}. Among ginsenosides, compound K and 20(S)-ginsenoside R_{b2} exhibited the most potent cytotoxicity against tumor cells: 50% cytotoxic concentrations of compound K in the media with and without fetal bovine serum (FBS) were 27.1 - 31.6 mM and 0.1 - 0.6 mM, and those of 20(S)-ginsenoside R_{b2} were 37.5 - > 50 and 0.7 - 7.1 mM mM, respectively. The cytotoxic potency of ginsenosides was compound K > 20(S)-ginsenoside R_{b2} >> 20(S)-ginsenoside R_{g3} > ginsenoside R_{b1} @ R_{b2}.

[PC2-3] [2003-10-10 09:00 - 13:00 / Grand Ballroom Pre-function]

Search for acetaldehyde trapping agents by using alcohol dehydrogenase assay

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Aldehyde and active form of free oxygen produced in alcohol metabolism in liver are the cause of liver cell damage. The main system of alcohol metabolism is composed of alcohol dehydrogenase(ADH), aldehyde dehydrogenase(ALDH) and cytochrome P4502E1. Alcohol dehydrogenase is reversible in alcohol metabolism. To block the backward reaction and enhance alcohol oxidation, acetaldehyde trapping agents were assayed. The assay was carried out by measuring decreasing NADH at 340nm, using acetaldehyde and NADH as substrate and coenzyme respectively. Semicarbazide, cysteine, L-alanine, taurine as aldehyde trapping agents were tested.

[PC2-4] [2003-10-10 09:00 - 13:00 / Grand Ballroom Pre-function]

Characteristics of Chitosanase from *Aspergillus fumigatus* KB-1

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Two chitosanases produced by *Aspergillus fumigatus* KB-1 were purified by ion exchange and size exclusion chromatographies. Molecular weights of chitosanases were 111.23 KDa (chitosanase I) and 23.38 KDa (chitosanase II). The N-terminal amino acid sequence of chitosanase II was determined: YNLPNNLKQIYDKHKGKXSXLAK(?)GFTN. The optimum pH of the chitosanase I and II were 6.5 and 5.5 respectively. The optimum temperatures were 60°C and 70°C. Two chitosanases were most stable at 10°C. The stability of chitosanase I was declined along with increase of pH, but chitosanase II stability was less variable to pH. Chitosanase I was strongly inhibited by Bi^{2+} , Cu^{2+} , Fe^{2+} and Hg^{2+} . Chitosanase II was also inhibited by Cu^{2+} . Hydrolysis products of two chitosanases were analyzed by HPLC and GPC. Chitosanase I was exo-splitting type which hydrolyzed substrate to glucosamine. Chitosanase II showed endo-splitting mode which produced dimer, trimer and tetramer of glucosamine.

[PC2-5] [2003-10-10 09:00 - 13:00 / Grand Ballroom Pre-function]

Distribution of Pathogenic Genes and Molecular Typing of *Yersinia pseudotuberculosis* isolated from Spring Water in Seoul

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In order to investigate the pathogenic genes and genetic relationships of *Y. pseudotuberculosis*, we isolated 9 strains of *Y. pseudotuberculosis* from about 380 spring water sites in Seoul and carried out antibiotic susceptibility test, biological test and molecular typing. All isolated strains were distributed throughout the northeast area in Seoul (Mt. Bookhan, Mt. Soorak, Mt. Boolam and etc...). Antibiotic susceptibility test revealed that all the strains were susceptible to chloramphenicol, gentamicin, neomycin and amoxicillin/clavulanic acid, but were resistant to novobiocin and vancomycin. For the identification of pathogenic *Y. pseudotuberculosis*, the strains were analyzed for chromosomal virulence gene (*inv*) and plasmid-borne genes (*yadA* and *lcrF*) by PCR. All the strains were positive for the *inv*, but only five strains were positive for the *yadA* and *lcrF*. Finally, RAPD-PCR and PCR-Ribotyping were carried out and the strains were grouped with 90% similarity. RAPD-PCR revealed 4 clusters of the strains and PCR-Ribotyping revealed 2 clusters. The results of these tests confirmed the view that RAPD-PCR had stronger discriminating power than PCR-Ribotyping.

[PC2-6] [2003-10-10 09:00 - 13:00 / Grand Ballroom Pre-function]

Antiallergic Activity of Ginsenoside R_{h2}

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Ginseng (the root of *Panax ginseng* C.A MEYER, family Araliaceae) is frequently used as a crude substance in Asian countries as a traditional medicine. The major components of ginseng are ginsenosides, which have been reported to