

findings, it is suggested that kakkalide is a prodrug, and irisolidone is a bioactive agent for counteracting the effect of drinking and hepatic injury.

[PC2-5] [04/18/2003 (Fri) 09:30 - 12:30 / Hall P]

Diarylheptanoid Isolated from *Alpinia officinarum* Inhibits Pancreatic Lipase

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Pancreatic lipase-inhibitory activity of the rhizome of *Alpinia officinarum* (AO) and its antihyperlipidemic activity were measured. When water extract of AO was stepwise fractionated with organic solvents, ethylacetate fraction exhibited the most potent inhibition. From it, Diarylheptanoid was isolated as an inhibitor of pancreatic lipase and we investigated its *in vitro* inhibitory effect of lipase activity and *in vivo* antihyperlipidemic effect. AO, ethylacetate fraction and Diarylheptanoid significantly inhibited lipase activity, and serum TG level in corn oil feeding-induced mice and serum TG and cholesterol in Triton WR-1339-induced hyperlipidemic mice.

[PC2-6] [04/18/2003 (Fri) 09:30 - 12:30 / Hall P]

Optimal culture conditions for production of Escherichia coli Adhesin protein coupled to Escherichia coli Heat Labile Enterotoxin A2B in Escherichia coli TB1.

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The FimH subunit of type 1-fimbriated *Escherichia coli* has been determined as a major cause of urinary tract infection. To produce a possible vaccine antigen against urinary tract infection, the fimH gene was genetically linked to the ltxa2b gene, which was then cloned into the pMAL-p2E expression vector. The chimaeric construction of pMALfimH/ltxa2b was transformed into *Escherichia coli* TB1 and its N-terminal amino acid sequence was analyzed. Fusion protein, the adhesin fused to the *Escherichia coli* heat labile enterotoxin A2B (LTxA2B), was induced for 4 hr with 0.3 mM isopropyl- β -D-thiogalactopyranoside (IPTG) at 37C, to yield soluble fusion protein. The expressed fusion protein was confirmed by SDS-PAGE, western blotting, and GM1-ganglioside ELISA using antibodies for maltose binding protein (MBP) and cholera toxin subunit B(CTXB). The results indicate that the purified fusion protein is an Adhesin/LTXA2B protein containing GM1-ganglioside binding activity of LTXB. The Adhesin/LTXA2B protein may be used as a candidate antigen for oral immunization against uropathogenic *E.coli*.

[PC2-7] [04/18/2003 (Fri) 09:30 - 12:30 / Hall P]

Inhibitory effects of Kimchi lactic acid bacteria on harmful enzymes of human intestinal bacteria

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Lactic acid bacteria have been considered as the most beneficial probiotic organisms contributing to inhibition of harmful and putrefactive intestinal bacteria. Among them, Bifidobacterium spp. has been considered as one of the most beneficial probiotic organism that can improve the health of humans, since it is one of the major bacteria flora in human intestine. However, the harmful enzyme-inhibitory activity of lactic acid bacteria of Kimchi, which is a representative Korean fermented food has not been evaluated. We isolated one hundred lactic acid bacteria from Baechu- and Mu-Kimchi and the inhibitory effects of these isolated bacteria on harmful enzymes of human intestinal microflora were examined by cocultivation of the isolated bacteria with E. coli or total human intestinal microflora. In comparison with the results of E. coli or intestinal microflora cultivation, Kimchi lactic acid bacteria effectively inhibited harmful enzymes (b-glucuronidase and tryptophanase) of E. coli and lowered the pH of the culture media. Among tested lactic acid bacteria, Lactobacillus B-1 and Leuconostoc M-5 showed the highest inhibitory effect of fecal harmful enzymes.

[PC2-8] [04/18/2003 (Fri) 09:30 - 12:30 / Hall P]

The effects of chitosan complex on the various bacteria

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To assess the effect of chitosan complex with metal ion on various pathogenic bacteria, the antibacterial activities were investigated. Arsenic, bismuth, calcium, iodine, iron, mercury, platinum, and silver were used as a metal ion. Staphylococcus aureus, Streptococcus mutans, Helicobacter pylori, Propionibacterium acnes and human saliva were examined. It was demonstrated that metal ions associated chitosan showed aggregation activities on various pathogens.

[PC2-9] [04/18/2003 (Fri) 09:30 - 12:30 / Hall P]

Monitoring on the Bacterial Resistance to Antibiotics

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In the situation of high bacterial resistance to antibiotics in Korea, to assess diffusion of methicillin-resistant Staphylococcus aureus (MRSA) and levels of bacterial resistance to antibiotics in community, we monitored antibiotic resistance of S. aureus isolates from healthy volunteers of community. From disc diffusion test on 940 nasal S. aureus isolates from 2958 healthy volunteers of the community of six cities (Seoul, Keonggi, Jeonju, Busan, Chuncheon and Chongju) in Korea in 2002, the resistance rates were as follows: penicillin resistant, 84.7%; oxacillin resistant (MRSA), 2.5% ; erythromycin resistant, 23.6%; tetracycline resistant, 12.2%; gentamicin resistant, 11.7%; clindamycin resistant, 1.1%; chloramphenicol resistant, 2.0%; ofloxacin resistant, 0.3%; sulfamethoxazole-trimethoprim (cotrimoxazole) resistant, 1.4%; vancomycin resistant (VRSA), 0%. From mecA-specific polymerase chain reaction, the 29 MRSA isolates were identified to contain the mecA gene. Summarily, in the community 2.5% of nasal S. aureus isolates were MRSA, and the resistance rates of nasal S. aureus isolates were high in the order of penicillin (84.7%), erythromycin(23.6%), tetracycline (12.2%) and gentamicin (11.7%).