G001

A Possible Mechanism for the Antibacterial Action of Silicone Catheter Containing Ciprofloxacin

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In a previous study, we introduced the antimicrobial efficacy of silicone catheters containing ciprofloxacin (CFX-SC) against the most frequently found microbial pathogens in catheter-related infections However, the mechanism for the antibacterial action of CFX-SC is not yet reported We formulated a hypothesis that the action mechanism of CFX-SC is similar to the quinolone family and then both spectrophotometric and cut plug methods were employed to verify the hypothesis The UV spectrum of the catheter effluent having absorption maximum at 272nm was appeared to have similar characteristic as that of ciprofloxacin standard. The antibacterial activity of the catheter effluent was confirmed by the cut plug methods on MHA plates seeded with testing microorganisms. These results suggest that the primary action mechanism of CFX-SC is the release of ciprofloxacin from the silicone catheter. When treated with CFX-SC, release of 260nm absorbing substances from *S. aureus* and *E. coli* quickly increased. This result suggest that the catheter effluent leads to leakage of cytoplasmic constituents.

G002

Influences of Silica Nanoparticles on *Caenorhabditis elegans*

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Nanoparticels have a number of significant commercial uses, but there are limited data available for evaluating potential health hazards of nanoparticles. *C.elegans* are selected as a model animal and fed with silica nanoparticles(SNPs) in order to determine whether SNPs can accumulate in animals To track SNPs in the animals, SNPs were visualized by including fluorescent dye For bio accumulation study, *C elegans* in L1 stage were fed with both SNPs and *E. coli* on NGM plates for 3 days, later transferred onto a plate seeded with *E coli*, and SNPs in the transferred animals were observed by confocal microscopy. Similarly, potential hazards of transference of SNPs to the next generation was evaluated by examining the presence of SNPs in animals hatched from the SNP-fed gravid adults As results, SNPs were observed in the lumen of the SNP-fed animals during the SNP feeding but were excreted from the animals within 48 hrs after SNP-feeding was stopped SNPs were not found in the next generation, either It is suggested that our SNPs are safe at least in *C elegans*

G003

Identification of the Functionanl Domain of cFLIP Involved in Inhibition of Apoptosis Induced by TRAIL

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The cellular FLICE-inhibitory protein (cFLIP) has been known to act as an inhibitor of apoptosis. Suppression of the caspase-8 by the cellular FLICE-inhibitory protein (cFLIP) leads to inhibition of the apoptosis induced by TRAIL The N-terminal domain of $cFLIP_L$ is composed of two death effect domains (DEDs) and the C-terminal domain of $cFLIP_L$ contains inactive caspase-like domain. The $cFLIP_S$ is composed of two DEDs, but not caspase-like domain In this study, we generated a series of deletions in cFLIP gene to determine the essential domain for inhibition of apoptosis induced by TRAIL These c-FLIP constructs were stably transfected and the effects of them on cell death were studied. The expression of full length $cFLIP_L$, cFLIP-p43, or $cFLIP_S$ conferred resistance to TRAIL-mediated apoptosis. However, cFLIP-p19 containing amino terminal 172 residues of the $cFLIP_S$ which is composed of only two DEDs did not affect apoptosis induced by TRAIL. These results indicate that a nucleotide region between 516 and 666 region (that is corresponding to a polypeptide region between 173th and 222nd amino acids of $cFLIP_S$) appears important in inhibiting the apoptosis induced by TRAIL.

G004

Antibiotics Susceptibility and Toxin-Producing Genes Inspection by PCR against *Escherichia coli* Isolated from Food

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We collected 25 *Escherichia coli* strains isolated from food(2,618 samples) in Seoul from Jan to Oct in 2004 and analysed the antimicrobial susceptibility by antimicrobial disk method, also detected the specific pathogenic genes of *E coli* by multiplex PCR As a result of the 14 kinds of the antimicrobial susceptibility test, 7 kinds were shown antimicrobial resistance The antimicrobial susceptibility to Cefazolin (CZ), Cephalothin(CF), Gentamicin(GM) and Cefepime(FEP) was 100 % The resistance rates to Erythromycin(E) was 84 0 %, Ampicillin(AM), Tetracycline(Te), and Imipenem(IPM) was 24.0 % respectively, Streptomycin(S), Ciprofloxacin(CIP) were 8 0 %, and Amoxillin/clavulanic acid(AmC) was 4.0 %. The resistance patterns varied to 8 types Among them, single drug resistance pattern was 16 isolates(64 0 %), 2-drug resistance pattern was 5 isolates(20 0%) and 3-drug resistance pattern was 2 isolates(8 0%). The most prevalent drug-resistance type was E(14 isolates, 56 0 %), followed by E-IPM(3 isolates, 12.0 %). There was no toxin-producing *E coli* on 25 isolates by multiplex PCR(LT, ST ,VT1 and VT2).