

3-MCPD induced spermatotoxic effect, which caused a antifertility on male.

[PA4-9] [ 2003-10-10 09:00 - 13:00 / Grand Ballroom Pre-function ]

### **Effects of zinc and resveratrol on cadmium-induced apoptosis and cell arrest in MCF-7 and MDA-MB-231 cells**

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Cadmium, a human carcinogen, can induce apoptosis in various cell lines. Despite extensive research, the mechanisms of cadmium-induced apoptosis are poorly understood, and its toxicity and estrogenic potential in human are not clear. This study was performed to investigate the apoptotic activities of cadmium on two human breast cancer cell lines: MCF-7 cells, an estrogen receptor (ER) positive cell line, and MDA-MB-231 cells, an ER negative cell line. Both cells were treated with CdCl<sub>2</sub> 100μM for 12hrs, and the apoptosis was determined by DNA fragmentation, DAPI staining, and expression of caspase-9. Flow cytometric analysis showed that MCF-7 cell was arrested in S phase and induced expression of p21 and p27 after treated CdCl<sub>2</sub>. The expression of ER-α, ER-β, pS2 and activities of antioxidative enzymes such as superoxide dismutase, catalase, glutathion reductase were determined also. Cadmium induced apoptotic cells dose-dependently, increased S phase cell population and decreased antioxidative enzyme activities in both cells. The expressions of ER-α, ER-β and pS2 were increased in MCF-7 cells, and the expression of ER-β and pS2 were increased in MDA-MB-231 cells. Co-treatment of zinc (100μM, 12hrs) or preincubation with resveratrol (25μM, 12hrs) decreased the cadmium-induced apoptotic cell numbers and recovered the antioxidative enzyme activities in both cells. Our data showed that the cadmium induced apoptosis and cell cycle arrest in human breast cancer cells by oxidative stress and antioxidants such as zinc and resveratrol inhibited cadmium-induced apoptosis. and cell arrest.

[PA4-10] [ 2003-10-10 09:00 - 13:00 / Grand Ballroom Pre-function ]

### **Analysis of 3-monochloro-1,2-propanediol(3-MCPD)in soy sauce products in Korea**

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3-Monochloro-1,2-propanediol(3-MCPD) was analyzed in soy sauce products commercially available in Korea. A total of 24 samples were collected and 3-MCPD was determined by GC/MS. Sources of 24 samples were classified by manufacturing methods as naturally brewed(NB), acid hydrolyzed(AH) and mixed(M=NB+AH) soy sauces. 3-MCPD was not detected in NB soy sauce products (< 0.01 ppm, mg/kg) whereas AH and M soy sauce products showed a wide range of 3-MCPD contamination(0.01 ~ 2.038ppm). The contaminated levels of 3-MCPD in soy sauce products were higher than the permissible or tentative permissible level of 3-MCPD in both European Community(0.02 ppm) and Korea(0.3 ppm). These data suggest that 3-MCPD levels contaminated in soy sauce products in Korea were shown to be too high and should be reduced to as low a level technologically feasible to protect Koreans from the exposure to toxic chemical, 3-MCPD.

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### **Effects of Saururus chinensis Baill on Atherosclerosis and Lipidperoxidation in 2,3,7,8-tetrachlorodibenzo-p-dioxin Treated Rats.**

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Saururus chinensis Baill (Saururaceae) is a perennial plant that has been used in the treatment of edema, jaundice and gonorrhea in Korean folk medicine. This study was carried out to investigate the inhibitive effects of