environment, they have become widespread environmental pollutants, thus leading to a variety of phthalates that possibly threaten the public health. Among phthalate esters, dibutyl phthalate (DBP) is reported to have estrogenic activity. To elucidate estrogenic activity of DBP, it was studied by E-screen test and cDNA microarrays in MCF7 human breast cancer cells. The E-screen test uses estrogen-sensitive human breast MCF7 cells and compares the cell yield achieved after 6 days of culture in the medium supplemented with 5% charcoal-dextran stripped fetal bovine serum (FBS) with diverse concentrations of 17β-estradiol and DBP. 17β-estradiol of $10^{-8}$ M and DBP of $10^{-7}$ M were active in the E-Screen test. Based on the established doses, we compared the pattern of gene expression with the cDNA microarray. It showed some of variation in gene expression patterns among MCF7 cells treated with 17β-estradiol and DBP.

[PA4-20] [ 10/19/2000 (Thr) 10:00 - 11:00 / [Hall B] ]

## Suppressive Effect of Bisphenol A on the Cytochrome P450 1A1 Induction in Hepa-1c1c7 Cells

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Bisphenol A (4,4'-isopropylidenediphenol) is a monomer in polycarbonate plastics and a constituent of epoxy and polystyrene resins that are used extensively in the food-packaging industry and it has been shown to possess estrogenic properties. In the present study, we investigated the effect of bisphenol A on TCDD-inducible P450 1A1 gene expression in mouse hepatoma Hepa-1c1c7 cells. 2,3,7,8-Tetrachlorodibenzo-p-dioxine (TCDD)-induced cytochrome P450 1A1-specific 7-ethoxyresorufin O-deethylase (EROD) activity was markedly reduced in the concomitant treatment of TCDD and bisphenol A in a dose dependent manner. TCDD-induced P450 1A1 mRNA level was also markedly suppressed in the concomitant treatment of TCDD and bisphenol A. Transient transfection assay using dioxin-response element (DRE)-linked luciferase revealed that bisphenol A reduced transformation of the aryl hydrocarbons (Ah) receptor to a form capable of specifically binding to the DRE sequence in the promoter of the P450 1A1. These results suggest the down regulation of the P450 1A1 gene expression by bisphenol A in Hepa-1c1c7 cells might be antagonism of the DRE binding potential of nuclear Ah receptor.

[PA4-21] [ 10/19/2000 (Thr) 10:00 - 11:00 / [Hall B] ]

## MEASUREMENTS OF ESTROGEN LIKE AND DIOXIN LIKE ACTIVITIES IN KOREAN RIVER WATER USING REPORTER GENE SYSTEM.

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The endocrine system is a complex network of glands and hormones that regulates many of the body's functions, including growth, development and maturation, as well as the way various organs operate. The endocrine glands (the pituitary, thyroid, adrenal, thymus, pancreas, ovaries, and testes) release carefully-measured amounts of hormones into the bloodstream that act as natural chemical messengers, traveling to different parts of the body in order to control and adjust many life functions.
Endocrine disruptor is a synthetic chemical that when absorbed into the body either mimics or blocks hormones and disrupts the body's normal functions. This disruption can happen through altering normal hormone levels, halting or stimulating the production of hormones, or changing the way hormones travel through the body, thus affecting the functions that these hormones control. Chemicals that are known human endocrine disruptors include diethylstilbesterol (the drug DES), dioxin, PCBs, DDT, and some other pesticides.
Domestic and industrial effluents have been discharged to Kumho River, Kum River, Mankyung River and Miho Stream of Korea, so contaminated with various organic compounds. We have