An KH,Choi SR,Kim HJ,Kim BH

College of Pharmacy, Chungnam National University

We investigated Free radical generation of endocrine disruptor,
Bisphenol A and Alkyl esters of phthalic acid using lipid peroxidation, enzyme assay, MTT assay. Bisphenol A generated free radical, increased, lipid peroxidation, damaged antioxidant system and SK-MEL-28 Cell Line viability was dose-dependently increased. Also alkyl ester of phthalic acid generated free radical but slightly. The generation of free radical induced by endocrine disruptor was inhibited by antioxidant and free radical scavenger. The result of the study are demonstration on free radical induced by endocrine disruptor and this result may be useful for evaluating toxic effects of endocrin disruptor

[PA4-23] [04/20/2001 (Fri) 10:30 - 11:30 / Hall 4]

THE ROLES OF ATP AND CALCIUM IN MORPHOLOGY CHANGES AND CYTOTOXICITY INDUCED BY BENZOQUINONE IN PLATELETS

Lee SK, Chung SM, Lee MY, Bae ON and Chung JH

College of Pharmacy, Seoul National University, Seoul 151-742 Korea

To understand mechanism of benzoquinone-induced cytotoxicity, the roles of ATP and calcium in platelet toxicity and morphology changes was investigated. Using scanning electron microscopy, morphological changes to platelets following 1,4-benzoquinone exposure consisted of membrane blebbing at 5 min which was significantly different from shape changes (pseudopod formation) observed in response to physiological agonists. Benzoquinone-induced platelet membrane bleb formation was associated with rapid depletion of intracellular ATP and independent of presence of extracellular calcium. Benzoquinone-induced platelet lysis (LDH leakage) observed between 20-30 mins was dependent on extracellular calcium and associated with increased cytosolic calcium. Benzoquinone-induced cytotoxicity was inhibited by calmodulin antagonists, suggesting that calmodulin could play a major role in 1,4-benzoquinone toxicity via protease activation. These results suggested that the progression of events for quinone-induced cytotoxicity in platelets to be as follows: quinones deplete intracellular ATP; formation of blebs occurs; calcium homeostasis is disrupted, resulting activation of calmodulin-dependent proteases; irreversible cytotoxicity occurs.

[PA4-24] [04/20/2001 (Fri) 10:30 - 11:30 / Hall 4]

Suppression of cytochrome P450 1A1 in Mouse hepatoma Hepa-1c1c7 cells by o.p'-DDT

Kim, JY°*., Choi, CY*., Jeong, HG*'**.

*Department of Pharmacy, Chosun University, Kwang-ju, 501-759.**Department of Biomaterial Engineering, Chosun University, Kwang-ju, 501-759.

Organo chlorine pesticides have received the most attention because of their persistence in the environment, ability to concentrate up the food chain, continued detection in the food supply and breast milk, and ability to be stored in the adipose tissue of animals and humans. In the present study we investigated the effect of op-DDT on TCDD-inducible Cytochrome (P450 1A1) gene expression in mouse hepatoma cell line Hepa-1c1c7 cells. Cultured mouse hepatoma Hepa-1c1c7 cells were treated with either o.p'-DDT or/and 2,3,7,8-tetrachlorodibenzo-p-dioxin (TCDD) or in combination to assess the role of o.p'-DDT in the process of P450 1A1 induction. TCDD-induced P450 1A1-specific 7-ethoxyresorufin O-deethylase (EROD) activity was markedly reduced in the concomitant treatment