

[P-13]

**EFFECTS OF DI(N-BUTYL) PHTHALATE, AN ENDOCRINE
DISRUPTOR ON THE IMMUNE SYSTEM OF PREGNANT SD
RATS AND THEIR PUPS**

Juno H. Eom, Seung-Tae Chung, Jae-Hyun Park, Jong-Kwon Lee, Hyung-Jin
Chung, Tae-Woo Kwan, Hyung-Soo Kim* and Hae-Young Oh

Immunotoxicology Division, National Institute of Toxicological Research, Korea
Food and Drug Administration, 5 Nokbun-Dong, Eunpyung-Ku, Seoul, 122-704,
Korea

Di-n-butyl phthalate(DBP) is one of the most commonly used phthalic acid esters(PAEs). It is extensively used as a plasticizer in elastomers and explosives, as a solvent for printing inks and resins and as a textile lubricating agent. It is also present in the formulations of various cosmetic products. DBP has been identified as a reproductive toxicant in several animal species and also known as an endocrine disruptor. However the direct or indirect immunomodulatory effect of DBP exposure has little reported. Therefore in the present study, the effect of DBP on immune function was investigated using rats as experimental animals. Timed-bred pregnant SD rats were orally dosed with 0, 250, 500, or 750 mg DBP/kg body weight once a day from gestational day(GD) 5 to 18 and postpartum day(PD) 3 to 18. On PD22, the dams and their pups were euthanized and examined for alteration in parameters associated to immune function. The results showed no significant changes in body weight, thymus weight, thymus and spleen cellularities, the mitogen(ConA and LPS) responses of splenocyte, and also the distribution of arterial blood cells (except for at the dosage group of 250 mg DBP/kg body weight) and thymocyte subsets in both rat dams and pups. However DBP exposure on rat dams resulted in increases of liver weights of dams and their pups(not at 750 mg DBP/kg), and body and spleen weights in pups (not at 750 mg DBP/kg). On the other hands, % distributions of CD8+ T cells(at 500 mg DBP/kg) and B cells (at 750 mg DBP/kg) among splenocyte subsets, and the percentage of neutrophils in blood (at 250 mg DBP/kg body weight) were significantly increased in rat pups, unlike their dams. Reasons of these distribution alterations of CD8+ T cells, B cells and neutrophils in rat pups are under study.

keyword : di-n-butyl phthalate, DBP, immunotoxicity