P-6

Effect of di-n-butyl-phthalate on cytotoxic activity of natural killer cells in C57BL/6

Juno H. Eom*, Seung-Tae Chung, Jin-Ho Kim, Jae-Hyun Park, Hyung-Jin Chung, In-Chang Hwang, Dong-Sup Kim and Hyung-Soo Kim

Department of Toxicology, 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 not only a plasticizer and solvent used in industry but also one of endocrine disruptor chemicals, a low level contaminant found in a wide variety of different media ranging from drinking water to infant formulae. To evaluate the cytotoxic function of NK cells in mice after contact with DBP, C57BL/6 female mice were orally dosed with di-*n*-butyl phthalate (250, 500, or 750 mg/kg body weight) for 14 consecutive days, and the control mice were administered vehicle (corn oil). Mice as positive control were given in a single intraperitoneal injection with immunosupression dose (200mg/kg body weight) of cyclophosphamide (CY). The NK cell mediated cytotoxic activity against target YAC-1 cells, body weights and relative organ weights (spleen, thymus, liver) were examined. Up to 500mg/kg/day, DBP significantly induced the cytotoxic activity of murine NK cell against standard NK cell target 51Cr-labeled YAC-1 tumor cell at both 200:1 and 100:1 effector/target ratios. At 750mg DBP/kg/day, the splenic NK activity was not different to negative control level. NK cell activity was decreased in CY-treated mice as compared with no treated mice, and CY decreased relative spleen and thymus weights significantly. However there is no significant change in the body and the relative organ weights as compared with control group. Taken together, the results indicate that mice treated with DBP have a functionally intact natural killer cell population in spleen.