

P54. PHTHALATE TOXICITY AND EXPOSURE PATHWAYS

Emrah DURAL^{*}, Zeliha KAYAALTI, Ferda Ceren ŞAHİN
Institute of Forensic Sciences, Ankara University, TÜRKİYE

Phthalates, or the phthalate esters, are a group of industrial chemicals largely used in general consumer products including plasticizers, additives and solvents; in applications that include building materials, clothing, cosmetics, perfumes, lubricating oils, solvent, detergents, food packing, toys, vinyl products; in medical applications that include blood transfusion bags and tubing, intravenous fluid bags and tubing, and other medical devices. Some phthalates are reported as carcinogenic, reproductive, and developmental toxicities stimulator in animal experiments. Diethyl phthalate (DEP) induce toxicity in the liver and kidney, also related maternal exposures. In addition, DEP exposure may also alter reproductive parameters. Dimethyl phthalate (DMP) induce decrements in body weight gain, changes in hemoglobin, and increases in absolute and relative liver weight. Benzyl butyl phthalate (BBP) have a weak estrogen activity at high exposure concentration. Bis(2-ethylhexyl) phthalate (DEHP) produce a wide range of adverse effects in experimental animals, notably liver toxicity and testicular atrophy. The toxic and carcinogenic effects of DEHP have been well established in experimental animals. Humans can be exposed to phthalates via ingestion, inhalation, dermal routes, as well as intravenous and parenteral absorptions. Phthalates are rapidly metabolized to their respective monoesters, after exposures. These monoesters may be further metabolized by oxidation and/or glucuronidation and excreted in urine and feces. The measurement of monoester phthalates metabolites in urine and serum used as biomarkers of exposure to phthalates.