

ABSTRACT

HISTOPATHOLOGICAL EFFECTS OF DIISOBUTYL PHTHALATE (DIBP) ON RAT LIVER

Merve AKYILDIZ

M.Sc. Thesis, Department of Biology

Supervisor: Doç. Dr. Yücel BAŞIMOĞLU KOCA

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Plasticizers (plastifiants) are chemical substances which are added to plastic processing mixtures and change the physical and mechanical properties of finished plastic products. When heat and pressure are applied, they increase plastic flow and malleability, decrease breakage and increase flexibility while creating a stronger and long-lasting product. Additives used for this purpose are called 'phthalates'. Many of these products when released into the natural environment have a permanent impact on the environment and human health due to their accumulation in nature and the living organisms exposed to them. The aim of this study is to investigate the histopathological effects of a widely used phthalate, Diisobutyl phthalate (DIBP), on the liver tissues of mammals.

In this study rats of the genus *Wistar albino* (n=10) were used. Three study groups were created: an experimental group, a control group fed with corn oil and a control group. The experimental group were administered by gavaj 3 different dosages (0.25 - 0.5 - 1 ml/kg/day) of DIBP mixed with corn oil every day for 28 days. At the end of the experiment, the liver tissue samples from all of the experimental and control group animals were investigated and evaluated with a light microscope (Olympus BX51) after routine light microscope histological preparation processes (fixation, dehydration, clearing, embedding, sectioning, staining) were carried out.

It was determined from the analyses that there was no significant histological difference between the control and the corn-oil fed control group. The group which was administered DIBP displayed deterioration in lobulation, focal hepatocellular necrosis, oedema in hepatic artery and vena centralis, decrease in glycogen and distortion of nucleus shape in relation to the dosage of DIBP they received. As a result, it has been determined that DIBP is a hepatotoxic substance and has been found to cause severe and irreversible histopathological changes in liver tissue.

Key Words: Diisobutyl phthalate, liver, histopatology.