

**THE EFFECT OF CARBOFURAN EXPOSURE ON MICE (*Mus musculus*)
AGAINST KIDNEY HISTOPATHOLOGY APPEARANCE OF MICE
PUPS DURING LACTATION PERIOD**

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ABSTRACT

Carbofuran is a broad spectrum carbamat insecticide which is used in various farm practices. An exposure of carbofuran has been reported able to induce Reactive Oxygen Species (ROS) or free radical in kidney. Free radical caused cells damage. The present study was designed to investigate the effect of carbofuran in kidneys histopathologic of mice pup whose dam were exposed by carbofuran during the lactation period. High levels of ROS can bind to various biomolecules such as proteins, lipids and nucleic acids so that carbofuran has a negative effect on tissue functions and structures. Free radical caused changes in the pathological conditions of the tissue including the kidneys. The dams were divided into four groups of five animals each. P0 animal group was received aquadest 0,1 ml per body weight (BW), P1 animal group was treated carbofuran at the dose of 1/16 LD₅₀ (0,3125 mg per BW), P2 animal group was treated carbofuran at the dose of 1/8 LD₅₀ (0,625 mg per BW), and P3 animal group was treated carbofuran at the dose of 1/4 LD₅₀ (1,25 mg per BW). The carbofuran was exposed via oral postnatal day 1st until 9th postnatal day after delivery. At postnatal day 10th, offspring were sacrificed. The kidney of mice pup was collected and processed for microscopic examination with hematoxylin-eosin staining. Microscopic observations on the histology of the mice pup kidney showed an increase in the degree of kidney damage as an increase in the dose of carbofuran given to the dams. The results showed tubular changes in the form of tubular degeneration, inflammatory cell infiltration and tubular necrosis in the kidney of mice pups.

Keywords: *carbofuran, lactation, mice pups, kidney.*