

Protective Role of Fish Oil against Hepatotoxicity Induced by Fipronil on Female Rats

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Abstract : This study was designed to evaluate the adverse effects of sub-chronic exposure to the fipronil on the liver of female rats at a dose equal to 400 mg /kg (1/10LD50) in drinking water and the protective role of fish oil at concentration 117.6 mg/Kg b.wt via oral routes daily for 28 days. Fipronil treatment caused a decrease in body weight gain and increase in relative liver weight. Fipronil induced a significant increase in the liver biomarkers enzymes such as alanine aminotransferases (ALT), aspartate aminotransferases (AST), alkaline phosphatase (ALP) and levels of total protein while fipronil caused a significant decrease in butyryl cholinesterase activity in FPN-treated rats. Oxidative stress biomarkers such as superoxide dismutase (SOD), catalase (CAT), glutathione-S-transferase (GST) were significantly decreased in liver tissue, while lipid peroxidation (LPO) was significantly increased in fipronil treating rats in a dose-dependent manner. FPN caused histopathological alterations in liver of female rats. From our results, it can be reported that FPN induced lipid peroxidation, oxidative stress, liver injury in female rats and fish oil used to protect animals against the adverse effect of pesticide exposure. These pathophysiological alterations in liver tissues could be due to the toxic effect of fipronil that associated with a generation of free radicals.

Keywords : fipronil (FPN), fish oil, hepatotoxicity, transaminases, antioxidant enzymes, female rats

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