

Di-(2-ethylhexyl) phthalate-induced reproductive toxicity and oxidative stress in male rabbits

Fayrouz A. Khaled *

Omar El-Mokhtar University, El Beyda, Libya.

Abstract

About 95% of di-ethylhexylphthalate(DEHP) produced and used as a plasticizer in polyvinyl chloride (PVC) resins for fabricating flexible vinyl products. Di(2-ethylhexyl)phthalate is a well-characterized reproductive system toxicant; it is a member of the phthalate chemical family, plasticizers that have potential endocrine-disrupting effects. DEHP and its metabolites alter proper testicular development in fetal rat models. The experiment was designed to study toxic effects of Di-(2-ethylhexyl) phthalate (DEHP) on semen characteristics, testosterone levels, testicular lipid peroxidation and testicular antioxidants in male New-Zealand white rabbits for 12 weeks. Rabbits were orally administered the doses of DEHP every day for 12 weeks. Results obtained showed that DEHP significantly ($P<0.05$) decreased libido (by increasing the reaction time), ejaculate volume, sperm concentration, total sperm output, sperm motility (%), total motile sperm per ejaculate (TMS), packed sperm volume (PSV), total functional sperm fraction (TFSF), normal and live sperm and semen initial fructose. While, initial hydrogen ion concentration (pH), and dead and abnormal sperm were increased ($P<0.05$). Also, testosterone levels, body weight (BW), relative weights of testes (RWT) and epididymis (RWE) were decreased. Thiobarbituric acid-reactive substances and lactate dehydrogenase were increased, while glutathione S-transferase, transaminases and phosphatases were decreased in seminal plasma of rabbits treated with DEHP compared to control



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Biography:

Dr. Fayrouz A. Khaled is working as Professor of Bio-chemistry, at El-Mokhtar University, Libiya.