

Mechanisms of Toxicity which Impact on Risk Assessment and Safety Evaluation

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Editor Note

Toxicology study aimed to understand the mechanisms of toxicity which impact on risk assessment and safety evaluation. Xenobiotics due to industrialization have huge adverse effects on human and animal health. Toxicological studies are having great importance in marking the relationship between dose and its effects on the exposed organism. In the previous volume 2 issue 2 of the journal comprised of 4 research article and a short communication received across the globe.

Municipal effluents are complex mixtures of contaminants such as polycyclic aromatic and aliphatic hydrocarbons, heavy metals, pesticides and pharmaceutical along with microorganisms which are a major source of contamination to aquatic biota. The purpose of Gagnes study was to assess the effects of dietary zinc oxide nanoparticles in adult fathead minnows. For assessing the immunocompetence leucocyte viability, phagocytosis activity, oxidative stress and DNA strand breaks in gills methods were employed. The results reveals that ingested nanoparticles could affect the immune system of fish exposed to municipal wastewaters in comparison with non-exposed fish, and exposed fishes were more vulnerable to pathogenic microorganisms [1].

Most recent reports have shown kojic acid (KA) to be a carcinogenic in rat liver but not in mouse skin. KA is photochemically unstable causing in vitro breakage of DNA. The research article of Gagne, had evaluated the irradiating KA and DNA and analyzed DNA adducts by the nucleotide ³²P-postlabeling (NPL) method. The meticulous investigation revealed that KA was found to be having the potential of photoactivated to DNA-damaging products in skin [2].

There is scarcity of information on the potential role of sex in the neurotoxic consequences of Methamphetamine (METH) exposure. METH was termed as highly addictive substance abused in both male and female across the world. The author McFadden, had tried to assess the large dose of METH for the persistent neurotoxic effect in both the

gender. The results reveal that neurotoxic effect of METH was found to be similar in both the genders provided to maintain hypothermia conditions [3].

Buprofezin is an insecticide was used in different cultivations including ornamental plants. This pesticide has been proved to possess neurotoxic and irritative effects on the respiratory tract, skin and eyes and endocrine disrupting activity. But there were no enough investigations to its human carcinogenic potential. The study Aprea, was to evaluate dermal and respiratory exposure of workers or agrarian to Buprofezin during spraying and stapling of ornamental plants in greenhouses. The present study states that risk level of buprofezin exposure to the workers are acceptable and possible precautionary measures were stated [4]. The short communication of Yonezawa's study was tried to shorten the study period and to reduce the number of Guinea pigs in skin phototoxicity studies for drug development rather could be performed using Sprague-Dawley rats [5].

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