

## Nanoparticles and its Risk to Animals

**Vaseem H\***

Aligarh Muslim University, India

\*Corresponding author: Huma Vaseem, Aligarh Muslim University, India, Email:

vaseem18huma@gmail.com

### Editorial

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### Editorial

Nanotechnology and the use of nano scale materials is a relatively new area of science and technology. The benefits of nanomaterials and nanoparticles are potentially enormous and are still being explored. They have become more and more popular and important in daily life. Nanoparticles (NPs) have many use in various fields like electronics, optics, textiles, medical devices, cosmetics, food packaging, water treatment technology, fuel cells, catalysts, biosensors and agents for environmental remediation [1-3]. As their demand is increasing day by day in different fields, their release into the environment is also rising. NPs are released from various products eg. by erosion of the materials, domestic waste water containing nanoparticles or the waste produced by industries and household products. By all these means they can contaminate the environment including our aquatic systems. Release of these NPs into the aquatic system is a new environmental problem as it can harm the aquatic animals. Many studies have been performed to demonstrate the harmful effect of nanoparticles on aquatic organisms. NPs have shown their effect on wide range of animals from invertebrates like crustaceans, annelids bivalve molluscs and echinoderms to vertebrates such as fish, amphibians and mammals [4-9]. Being one of the potential toxicant, more and more studies related to toxic effects of NPs are required on the organisms used as bioindicators so that risk of hazards caused by them on the environment can be monitored.

Due to small in size and high reactivity, NPs can inter into body by various ways like skin penetration, inhalation and injection etc. and can interact with the cells and organs. NPs interfere the normal function of body by disrupting normal physiology. It shows its damaging effect by producing reactive oxygen species (ROS), causing oxidative stress, and inflammation and cell death [10]. Hence there is need of the time to have fundamental understanding of the mechanism of action of NPs so that preventive measures could be taken to curb the NPS

toxicity. Requirement is also to prevent the disposal of NPs wastes into the water bodies by adapting proper strategies, improving existing waste management practices, strictness on waste water disposal policies of industries so that aquatic organisms could be protected from harmful effect of NPs, in turn our environment could also be saved.

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