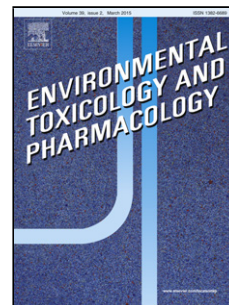


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FRESHWATER FISH *OREOCHROMIS MOSSAMBICUS*

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TOXICOLOGICAL EFFECT OF Al_2O_3 NANOPARTICLES ON HISTOARCHITECTURE OF THE FRESHWATER FISH *OREOCHROMIS MOSSAMBICUS*

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Highlights

- Toxicological effect of Al_2O_3 nanoparticles were studied using the freshwater fish *Oreochromis mossambicus*.
- Sub lethal concentrations (120, 150 and 180ppm) of Al_2O_3 NPs were exposed to the fishes for a period of 96 hour.
- Histoarchitecture of selected organs (brain, gill, intestine, kidney and muscle) in the control and treated fishes were observed.
- Histological anomalies were initiated in the fishes exposed to the lower concentrations of NPs
- The severity of lesions were more evident in fishes exposed to the highest concentration of nanoparticles.

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ABSTRACT

In the present study, freshwater fish *Oreochromis mossambicus* were exposed to sub lethal concentrations (120, 150 and 180ppm) of Aluminium oxide nanoparticles (Al_2O_3 NPs) for 96 hours. Histological abnormalities were not observed in the organs of control fishes whereas severe damages and extensive architectural loss was found in the brain, gill, intestine, kidney and muscle tissues of treated fishes with more pronounced effects in 180ppm. The results showed that the acute exposure to Al_2O_3 NPs altered the histoarchitecture in various fish tissues.

Keywords: Al_2O_3 -Nanoparticles; fish; *Oreochromis mossambicus*; Histology; Toxicity

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