Accepted Manuscript

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

Authors: Murali M., Athif P., Suganthi P., Sadiq Bukhari A., Syed Mohamed H.E., Basu H., Singhal R.K.

PII: S1382-6689(18)30039-5
DOI: https://doi.org/10.1016/j.etap.2018.03.004
Reference: ENVTOX 2971

To appear in: *Environmental Toxicology and Pharmacology*

Received date: 16-10-2017
Revised date: 7-2-2018
Accepted date: 4-3-2018

Please cite this article as: M. M, P. A, P. S, A. SB, H.E. SM, H. B, R.K. S, TOXICOLOGICAL EFFECT OF Al_2O_3 NANOPARTICLES ON HISTOARCHITECTURE OF THE FRESHWATER FISH *OREOCHROMIS MOSSAMBICUS*, *Environmental Toxicology and Pharmacology* (2010), https://doi.org/10.1016/j.etap.2018.03.004

This is a PDF file of an unedited manuscript that has been accepted for publication. As a service to our customers we are providing this early version of the manuscript. The manuscript will undergo copyediting, typesetting, and review of the resulting proof before it is published in its final form. Please note that during the production process errors may be discovered which could affect the content, and all legal disclaimers that apply to the journal pertain.

ACCEPTED MANUSCRIPT

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

Murali, M. [a], Athif, P.[a], Suganthi, P.[a], Sadiq Bukhari, A.[a*], Syed Mohamed, H.E. [a], Basu, H. [b], Singhal, R.K. [b]

a. Environmental Research Laboratory, P.G. and Research Department of Zoology, Jamal Mohamed College (Autonomous), Tiruchirappalli-620020, Tamil Nadu, India

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.

b. Analytical Spectroscopy Section, Analytical Chemistry Division, Bhabha Atomic Research Center, Trombay, Mumbai -4000085, India

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_3NPs altered the histoarchitecture in various fish tissues.

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

[*] Corresponding author: Dr. A. Sadiq Bukhari,
Environmental Research Laboratory,
P.G. and Research Department of Zoology,
Jamal Mohamed College (Autonomous),
Tiruchirappalli-620020,
Tamil Nadu, India.
E-mail: abjmc@yahoo.in
Tel: +91 9843380146

Download English Version:

https://daneshyari.com/en/article/8545891

Download Persian Version:

https://daneshyari.com/article/8545891

Daneshyari.com