



SDI Review Form 1.6

Journal Name:	International Journal of Biochemistry Research & Review
Manuscript Number:	2013_IJBcRR_7336
Title of the Manuscript:	Effect of Chronic Exposure to Petroleum Hydrocarbon Pollution on Oxidative Stress Parameters and Histology of Liver Tissues of Native Fowl (Gallus domesticus)
Type of the Article	Original Research Paper

General guideline for Peer Review process:

This journal's peer review policy states that **NO** manuscript should be rejected only on the basis of '**lack of Novelty**', provided the manuscript is scientifically robust and technically sound.

To know the complete guideline for Peer Review process, reviewers are requested to visit this link:

(<http://www.sciencedomain.org/page.php?id=sdi-general-editorial-policy#Peer-Review-Guideline>)



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PART 1: Review Comments

	Reviewer's comment	Author's comment (if agreed with reviewer, correct the manuscript and highlight that part in the manuscript. It is mandatory that authors should write his/her feedback here)
<u>Compulsory</u> REVISION comments	This paper contains some interesting experimental results on environmental pollution by petroleum hydrocarbon pollution and oxidative stress in native fowls. The presentation is very simple but correct. No mechanistic explanations for the oxidative mechanisms concerning the components of petroleum , no explanation for reactive oxygen species (ROS). Normally the most important biomarkers are antioxidant enzymes (SOD, CAT, GSTetc). The biomarker MDA needs some additional references. Some grammatical error, some textual mistakes (e.g....oxidant stress in p. 6, line 6 , better oxidative stress). In p. 6 ... reactive intermediates.... Which are the r.i.? In the last page COMOLETING INTEREST (Competing) References and comparison with other scientific results are very poor. References very old (2008). I added some references from PubMed . See also google scholar for more Discussions needs better arrangement and more experimental results from other scientific papers on oxidative stress by environmental pollutants , such as metals and petroleum hydrocarbons	Oxidative stress mechanisms have been included. Antioxidant enzymes SOD, CAT and GST had been earlier published from this same work. They have been corrected according to the reviewer's comment. This has been corrected with added references Discussion has been modified.
<u>Minor</u> REVISION comments	I recommend to increase the references and comparisons with similar experimental results. See for example the two papers I added in the end.	The two references given by the reviewer have been added.
<u>Optional/General</u> comments		



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Environ Monit Assess. 2011 Nov;182(1-4):205-13. doi: 10.1007/s10661-010-1870-0. Epub 2011 Jan 7.

Lipid peroxidation and antioxidant defense enzymes in *Clarias gariepinus* as useful biomarkers for monitoring exposure to polycyclic aromatic hydrocarbons.

Otitoloju A, Olagoke O.

Source

Department of Zoology, Ecotoxicology Unit, Faculty of Science, University of Lagos, Akoka, Lagos, Nigeria. bayotitoloju@yahoo.com

Abstract

The toxicological evaluations of crude oil, xylene, toluene and benzene were carried out against juvenile stages of *Clarias gariepinus*. On the basis of LC(50) value, benzene (0.017 ml/l) was found to be the most toxic followed by xylene (0.086 ml/l), toluene (0.398 ml/l) and crude oil (2.219 ml/l) was the least toxic. The results of the lipid peroxidation assay showed that the level of malonaldehyde (MDA) in liver and gills of fish exposed to all the test chemicals increased significantly ($P < 0.05$) when compared to control. Measurement of activities of antioxidant enzymes, superoxide dismutase (SOD), catalase (CAT) and glutathione-S-transferase (GST) in liver and gill of fishes exposed to sublethal concentration of the test chemicals over a 28-day period was found to decrease significantly ($P < 0.05$) when compared to control. The observed reduction in the activities of antioxidant defense enzymes such as SOD, CAT and GST in conjunction with an increase in MDA levels in the gill and liver tissues of test animals exposed to aromatic hydrocarbon compounds were recommended as a good battery of biomarkers for early detection of pollution during biomonitoring programmes.

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Environ Monit Assess. 2011 Sep;180(1-4):243-55. doi: 10.1007/s10661-010-1785-9. Epub 2010 Nov 26.

Oxidative stress in Nile tilapia (*Oreochromis niloticus*) and armored catfish (*Pterygoplichthys anisitsi*) exposed to diesel oil.

Noqueira L, Rodrigues AC, Trídico CP, Fossa CE, de Almeida EA.

Source

Departamento de Química e Ciências Ambientais, IBILCE/UNESP, R. Cristóvão Colombo 2265, CEP 15054-000, São José do Rio Preto, SP, Brasil.



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Abstract

Considering that diesel oil is one of the most common aquatic contaminants, we compare the oxidative stress between two species of fish with different habitats (Pterygoplichthys anisitsi, benthic and Oreochromis niloticus, nektonic) exposed to diesel oil. Malondialdehyde concentrations (MDA) and the activities of ethoxyresorufin-O-deethylase (EROD), glutathione S-transferase (GST), catalase (CAT), superoxide dismutase (SOD), and glutathione peroxidase were all analyzed in the fishes' livers and gills after 2 and 7 days of exposure to different concentrations of diesel (0.1 and 0.5 mL/L). In the tilapia, MDA levels and the activities of EROD and GST activity in the liver, as well as MDA levels and the activities of GST and SOD in the gill had statistically significant differences between the treatments and between the times of exposure. For the catfish, the same occurred in the case of MDA, EROD, and SOD in the liver and in CAT and SOD in the gills. There were significant differences in the enzyme activity and lipid peroxidation between the species. Although the activity of most enzymes seemed to be more expressive and responsive to diesel in *O. niloticus*, diesel oil also caused significant effects on oxidative stress parameters in *P. anisitsi*, even though this species is benthic and thus has less access to insoluble fractions of diesel oil. Therefore, both species can be used as sentinel organisms in environmental biomonitoring of diesel contamination.