1: Chemosphere. 2006 Feb 25; [Epub ahead of print]

Hepatic antioxidant enzymes and total glutathione of Cyprinus carpio exposed to three disinfectants, chlorine dioxide, sodium hypochlorite and peracetic acid, for superficial water potabilization.

Elia AC, **Anastasi V**, **Dorr AJ**.

Dipartimento di Biologia Cellulare e Am
Perugia, 06100 Perugia, PG, Italy.

Study of potential toxic effects on rainbow trout hepatocytes of surface water treated with chlorine or alternative disinfectants.
Chemosphere. 2005 Jun;60(1):65-73. Epub 2005 Apr 7.

This study was carried out in order to assess the effects of disinfectant-treatment on antioxidant response of Cyprinus carpio L. Therefore, enzymatic activities of glutathione S-transferases, glyoxalase I, glyoxalase II, glutathione peroxidases, glutathione reductase, catalase and total glutathione content of carp liver, exposed to surface water treated with three disinfectants for potabilization, sodium hypochlorite, chlorine dioxide and peracetic acid were investigated. Specimens of carp were exposed in four experimental tanks supplied with a continuous water flow from Lake Trasimeno (Italy), three of them treated with constant concentration of sodium hypochlorite, chlorine dioxide and peracetic acid, for 10 and 20 days, while the control tank was supplied with untreated lake water. Differences in biochemical parameters were observed in specimens following exposure to these disinfectants and mainly, chlorine compounds induced marked biochemical variations of carp liver, compared to those induced by peracetic acid treatment. Our results showed that antioxidant parameters of Cyprinus carpio could be used as biomarkers of oxidative stress when this species is exposed to disinfectants for water potabilization.

PMID: 16504240 [PubMed - as supplied by publisher]