Effects of sub-acute exposure of nickel on hepatic enzymes' activity of silver carp (*Hypophthalmicthys molitrix*)

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Abstract
The goal of this study was to assess the experimental effects of sub-acute exposure of nickel on hepatic enzymes' activity of silver carp (*Hypophthalmicthys molitrix*). Probite analysis was used to determine acute toxicity of nickel to the silver carp. The median lethal concentration (LC_{50}) value of nickel to silver carp was detected at 20.49 ± 0.028 mg/l for 96 h, and 25% and 50% of the 96-h LC_{50} values were selected as sub-acute concentrations. Fish were exposed for 14 days in sub lethal concentrations of nickel. Following exposure to nickel, hepatic enzymes' activities of fish in the exposed groups were affected more than that in the control group. Alanine aminotransferase (ALT), aspartate aminotransferase (AST) and Alkaline phosphatase (ALP) activity in nickel treated groups were significantly higher than the control group at experimental periods ($p<0.05$). This result implied that sub-acute exposure of nickel induced hepatic enzymes' activity in the silver carp.

Keywords: Sub-acute, Nickel, Hepatic Enzyme, Silver Carp