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## Toxicological studies of aqueous extract of *Adenia cissampeloides* in *Clarias batrachus* fish

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The effects of aqueous stem extract of *Adenia cissampeloides* on selected liver function biomarkers of fish (*Clarias batrachus*) were investigated. The aims were to determine the lethal concentration (LC50) of the extract to the fish and the effects on Aspartate aminotransferase (AST), Alanine aminotransferase (ALT), Alkaline phosphatase (ALP) and Unconjugated Bilirubin (UB). A total of one hundred and sixty (160) fish of average weight of 122 g were used in the study and grouped into five (A, B, C, D and E). The 24 hr, 48 hr and 72 hr lethal concentration (LC50) of the stem extract were determined. Those for the assay were exposed to 00 g/l, 0.6250 g/l, 1.250 g/l, 2.50 g/l and 5.0 g/l concentrations respectively, in triplicate for a total of eight hours. Blood sample was collected from one fish picked from each group at one-hour interval and assayed. One factor completely randomized ANOVA design was adopted in the analysis. The 24 hr, 48 hr and 72 hr, LC50 were 5.00 g/l, 2.50 g/l and 2.50 g/l respectively. There were increases in the activities of all the parameters assayed for. The results of analysis showed significant ($p<0.05$) increases in AST activities and concentrations of UB. However, increases in the activities of ALT and ALP were not significant ($p>0.05$). Large effect size ($\omega 2$) of 0.42 and 0.52 for UB and AST, respectively, were obtained. AST/ALT ratio of 1:5 indicated damages to liver cells and disruption of vital processes that might have elicited unfavorable cytotoxic reactions in the fish. It is possible that the same effects may occur in man; therefore, it was recommended that fish killed with this plant should be avoided if not properly heat treated.

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