
Determining the toxicity of papaya (*Carica papaya*) leaf extract on zebrafish (*Danio rerio*) embryos

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Herbal drugs becoming popular in medicine as well as in other fields including aquaculture. Papaya (*Carica papaya*) has proven antibacterial, anti-inflammatory and anti-tumor properties. However, the toxicity of papaya leaf extract needs to be tested to determine the teratogenic effects. Zebrafish (*Danio rerio*) embryo toxicity testing is one of the standard methods used in toxicological assays. Hence, present study investigated the acute toxicity effect of wild type papaya leaf extract on Zebrafish embryos. Zebrafish embryos (16 cell stage) were exposed to four different concentrations of aqueous papaya leaf extracts as 200, 150, 100 and 50 mg/ml (36 embryos per treatment). Distilled water was used as negative control while tetracycline (2 mg/ml) suspension was used as positive control. Lethality rate was recorded at 24, 48, 72 and 96 hours based on four apical observations of lethality i.e, coagulation of fertilized egg, lack of somite formation, lack of detachment of the tail and lack of heartbeat. The results indicated that median lethal concentration (LC₅₀) of papaya leaf extract after 96 hours was around 257 mg/ml which was higher than the tested concentrations. It was observed an increasing trend of mortality rate along with the concentrations. However, the results confirmed that papaya leaf extract below 100 mg/ml has low toxicity effect on zebrafish embryo compared to the tetracycline suspension.

Keywords: Herbal antibiotics, Papaya leaf extract, Toxicity, Zebrafish embryo

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