

Evaluation of effect of ethanol extraction of *Graptophyllum pictum* on Zebrafish (*Danio rerio*) embryo model through toxicity assay assessment

ABSTRACT

Graptophyllum pictum is a medicinal plant that helps to cure different forms of disease due to the availability of beneficial phytochemicals such as flavonoids, steroids, alkaloids, saponins and glycosides. The purpose of this research was to evaluate the toxicity effect of *G. pictum* extract on zebrafish embryos (*Danio rerio*) at different concentrations. *G. pictum* was extracted using the ethanol method. A toxicity test was done by exposing the *Danio rerio* embryo to the *G. pictum* extraction at different concentrations (0.244-1000 µg/ml) for 24, 48, 72 and 96 hours. The survival rate, hatching rate, heartbeat rate, scoliosis rate and melanin pigmentation were observed. Data were analyzed using SPSS version 27. The value of LC50 was calculated. Result showed that the LC50, value of *G. pictum* is 7.662 µg/ml. No hatching was observed at higher concentrations (31.25-1000 µg/ml) while the hatch ability of *Danio rerio* embryos was observed at lower concentrations (0.244-1.953 µg/ml). Scoliosis of zebrafish larvae was not present at all concentrations. The heartbeat of the zebrafish larvae treated with *G. pictum* extract was within a normal range from 120-180 beats per minute at a lower concentration. Melanin pigmentation was detected at 48, 72 and 96 hours post-fertilization and is normally absent at 24 hours post-fertilization. As a conclusion, *G. pictum* extract stills exhibit a mild toxicity effect in higher concentrations when it was evaluated on zebrafish embryos.

Keyword: *Graptophyllum pictum*; *Danio rerio* embryo; Heartbeat; Hatching and toxicity effect