Hystrix brachyura BEZOAR: AN IN VIVO TOXICITY EVALUATION USING EMBRYO ZEBRAFISH (*DANIO RERIO*) MODEL

Al'aina Yuhainis Firus Khan[1], Qamar Uddin Ahmed[2], Faizah Abdullah Asuhaimi[1], Tanzin Nippun Sharmin[2], Alfi Khatib[2], Ridhwan Abdul Wahab[1*]

[1]Department of Biomedical Science, Kuliyyah of Allied Health Sciences, International Islamic University Malaysia, 25200 Kuantan, Pahang, Malaysia.
[2]Department of Pharmaceutical Chemistry, Kulliyyah of Pharmacy, International Islamic University Malaysia, 25200 Kuantan, Pahang, Malaysia.

*Corresponding author email: ridhwan@iium.edu.my

ABSTRACT

Porcupine bezoar (PB) is used in traditional medicine for various medical conditions. However, its toxicity profile has never been thoroughly investigated to verify its safety nature. Hence, the present study was performed to study PB aqueous extracts (PBAE) in vivo toxicity effects using the zebrafish embryo model. The toxicity evaluated morphology and mortality of embryo at 96-hour post-fertilisation (hpf). The embryos were exposed with PB aqueous extract at 0.25, 0.5, 0.75, 1.0 and 1.25 mg/mL with egg water as negative control (NC) and 3, 4-dichloroaniline (4.0 mg/L) as positive control (PC). The PBAE found to affect tail detachment rate, hatching rate, severe craniofacial defects, brain morphology defects, spinal bent with somites and notochord deformities. Furthermore, it was also found to affect the soft tissues with absence/uninflated swim bladder, oedema in the yolk sac and pericardial area. Measured median lethal concentration, median effective concentration and teratogenicity index were 69.4 µg/mL, 28.5 µg/mL and 2.44 ratio respectively. The finding of this study concluded PBAE is a teratogen agent which induced severe malformation and high mortality on embryo zebrafish at high concentration.

Keywords: Porcupine bezoar; *Hystrix brachyura*; zebrafish; developmental toxicity

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