

## Abstract

With the rising popularity, herbal medicine has increasing consumption with a minimum 80% worldwide population or use it as their primary medicine depending on their culture and location. The usage of herbal medicine during pregnancy in Indonesia was reported to be 60% in 2020 due to an attempt to alleviate common side effects of pregnancy. However, herbal medicine has not been regulated enough in some countries, thus the teratogenic effect remains unknown. This study focuses on using zebrafish embryos to study the teratogenic effect of marketed herbal medicines in Indonesia. Zebrafish is a good candidate with its high genetic similarity to humans, high fertility, short lifecycle, and transparency for ease of observation. Furthermore, the LC50 value for teratogenicity characterization was also evaluated. The Zebrafish FET study from OECD was used as the main method in this study to see the morphological deformity. The results showed that all herbal medicine tested showed teratogenicity through morphological changes, with the main teratogenicity being pericardial edema, yolk sac edema, tail bent, and coagulation with teratogenic index value of 1.55, 1.18, and 1.61, respectively. Though, LC50 of drug 1 and drug 2, with concentration of 0.5431 mg/mL, 1.456 mg/mL, respectively, are considered as safe while drug 3 with concentration 0.0946 mg/mL are considered as harmful according to OECD characterization.

**Keywords:** *Zebrafish teratogenicity study; Herbal medicine teratogenicity; Fish Embryotoxicity Test*