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**PRELIMINARY EVALUATION OF TOXICITY OF A BINARY
MIXTURE OF CADMIUM AND CHROMIUM ON ZEBRAFISH
EMBRYO**

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Abstract

Heavy metals like cadmium (Cd) and chromium (Cr) exert toxic effects on aquatic vertebrates such as fish and amphibians. The present study employed a zebrafish embryo toxicity model to detect the toxic effects of a binary mixture of Cd and Cr. Fish embryo test model is considered an alternative approach to acute fish toxicity tests from the perspective of animal welfare as the embryos are not considered live until five days after fertilization. Zebrafish embryos were exposed to a binary mixture of Cd and Cr having different concentrations which are equal to standard levels (Cd⁺²: 0.00075 – 0.012 mg/L and Cr⁺³: 0.0125 – 0.2 mg/L) for 24, 48, 72, and 96 hrs according to OECD guideline no. 236. The percentage mortality of embryos was calculated after observing several toxicological endpoints. Generally, the percentage mortality increased with increasing concentration of the binary mixture though there was no significant difference between the control group and treatment groups. Coagulation of embryos, lack of heartbeat, and lack of somite formation were prominent among the toxicological endpoints observed. The low concentrations used in the study did not pose significant embryotoxicity. However, the present study provides insights into the gap in elucidating the effects of a binary mixture of Cd and Cr on zebrafish embryos.

Keywords: *embryotoxicity, heavy metals, zebrafish*