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INFLUENCE OF STRAIN DIFFERENCE OF BRINE SHRIMP (*Artemia*) ON ASSESSING HEAVY METALS POLLUTION

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Abstract

To discuss the strain difference of brine shrimp (*Artemia*) for pollution evaluation, three strains of *Artemia* in lakes of China (BLK), Russia (EBT), and Kazakhstan (KZK) were selected to conduct joint toxicity tests. The results showed that toxicity of the copper (Cu) and cadmium (Cd) varied with the *Artemia* strains. The values of 72h-LC_{50}-Cu for the EBT, BLK and KZK *Artemia* were 0.218 mg/L (0.091-0.505 mg/L), 0.214 mg/L (0.099-0.438 mg/L), and 0.072 mg/L (0.027-0.155 mg/L), while the corresponding data of 72h-LC_{50}-Cd were 11.506 mg/L (2.723- 55.117 mg/L), 1.174 mg/L (0.208-3.969 mg/L), and 0.260 mg/L (0.025-1.065 mg/L) in sequence. Considering the additive index of coeffects for aquatic toxicity, Cu and Cd also represented an antagonistic effect on all three *Artemia* strains, and their antagonistic effect varied with the *Artemia* strains. The toxic stress inhibited the development of *Artemia*, which could show the toxicity intensity and the antagonistic effect on different *Artemia* strains to a certain extent. It was meaningful to observe the development of *Artemia* continuously in an acute toxicity tests. The species or strains must be indicated when using *Artemia* for toxicity test, there is still much work to be done before *Artemia* is used as a tool for aquatic pollution assessment.

Keywords: brine shrimp, environmental assessment, environmental health, nauplii, toxic stress

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