

## **Acute effect of copper on *Puntius javanicus* survival and a current opinion for future biomarker development**

### **ABSTRACT**

*Puntius javanicus* experimental groups were exposed with to different concentration of copper (II) sulfate for 96 hours. Their mortality was recorded to determine LC50 value of copper concentration based on arithmetic, logarithmic and probit graphic analyses. The results obtained from these three mathematical analyses were  $11.37 \pm 0.58$ ,  $11.01 \pm 0.73$  and 10.68 mg/L, respectively. From the present study, we suggested that in the future, the range of 0 to 5.0 mg/L can be used to study the effect of copper concentration on fish activity at biochemical and physiological levels. Based on probit analysis, this maximum range is lower than LC10 value i.e. 6.11 mg/L. Therefore, it can be positively hypothesised that there would be no mortality occur except for several symptoms of adverse effects beyond of 5.0 mg/L treatment.

**Keyword:** Cu; *Puntius javanicus*; Probit biomarker; LC50