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## Median lethal concentration (LC<sub>50</sub>) and morphological effects of tributyltin chloride (TBTCI) on male and female *Artemia salina*

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## **Abstract**

Elevation of tributyltin (TBT) compounds in marine environment could affect organisms at any life stages. The present study aimed to determine median lethal concentration ( $LC_{50}$ ) and morphological effects of tributyltin chloride (TBTCI) on adult males and females of brine shrimp (*Artemia salina*). Individuals of adult males and females of *A. salina* were exposed to different concentrations of TBTCI. Morphological conditions of every *A. salina* individuals were observed under a microscope. Results showed the  $LC_{50}$  of TBTCI toxicity in male *A. salina* was 146.99 ngL-1 and for the female was 94.72 ngL-1. The  $LC_{50}$  of TBTCI was significantly different among different sexes. There was also a significant difference in some morphological characters of males and females exposed to different TBTCI concentrations. These morphological changes include their total length, head width, abdominal width, and tail width after the 24 h exposure to TBTCI. These results suggested that suspensions of the TBTCI were toxic to *Artemia*, most likely due to the formation of benign TBTCI aggregates in water. However, the mortality increased with extended exposure to 24 h. Highest mortality occurred at 200 ngL-1 TBTCI; 43.33% for male and 90% for female ( $LC_{50} < 150$  ngL-1) for both. Depended on these findings, the female was more sensitive for TBTCI toxicity test when compared to male. These effects were attributed to changes in morphological characteristics of the body *A. salina*.

Keywords: Artemia salina, antifouling biocides, bioassay, organotin, toxicity.

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