Telescopium telescopium as potential biomonitors of Cu, Zn, and Pb for the tropical intertidal area

ABSTRACT

The distributions of Cu, Zn, and Pb concentrations in the selected soft tissues (foot, cephalic tentacle, mantle, muscle, gill, digestive caecum, and remaining soft tissues) and shells of the mud-flat snail Telescopium telescopium were determined in snails from eight geographical sites in the south-western intertidal area of Peninsular Malaysia. Generally, the digestive caecum compared with other selected soft tissues, accumulated higher concentration of Zn (214.35+/-14.56 microg/g dry weight), indicating that the digestive caecum has higher affinity for the essential Zn to bind to metallothionein. The shell demonstrated higher concentrations of Pb (41.23+/-1.20 microg/g dry weight) when compared to the selected soft tissues except gill from Kuala Sg. Ayam (95.76+/-5.32 microg/g dry weight). The use of different soft tissues also can solve the problem of defecation to reduce error in interpreting the bioavailability of heavy metals in the intertidal area.

Keyword: Copper; Zinc; Lead; Selected soft tissue; Shell; Telescopium telescopium; Tropical intertidal area of Peninsular Malaysia; Biomonitor