Gill and digestive caecum of telescopium telescopium as biomonitors of Pb bioavailability and contamination by Pb in the tropical intertidal area.

Abstract

In this paper we investigated the concentrations of Pb in seven different soft tissues (foot, cephalic tentacles, mantle, muscle, gill, digestive caecum and remaining soft tissues) of 17 geographical populations of Telescopium telescopium collected from the intertidal area of Peninsular Malaysia. Two points can be presented based on the present study. First, as expected, different concentrations of Pb were found in the different soft tissues, indicating different mechanisms of bioaccumulation and regulations of Pb in these different tissues. By comparing the Pb concentrations in the similar tissues, spatial variation of Pb was found in the different sampling sites although there is no consistent pattern of Pb contamination in these sampling sites. Second, based on the correlation coefficients and multiple linear stepwise regression analysis between Pb concentrations in the different soft tissues and Pb concentrations in geochemical factions in the surface sediments, it is found that gill and digestive caecum can truly reflect Pb contamination and Pb bioavailabilities in the tropical intertidal mudflats. To our knowledge, this is the most comprehensive study on Pb in the different soft tissues of T. telescopium, in relation to the habitat sediments of the snails.

Keyword: Different soft tissues; Pb distribution; Telescopium telescopium.