

Accumulation and depuration of Cu and Zn in the blood cockle *Anadara granosa* (Linnaeus) under laboratory conditions.

Abstract

Studies on the accumulation (4 days of single metal exposure) and depuration (6 days in natural seawater) of Cu and Zn were conducted in the blood cockle *Anadara granosa* under laboratory conditions. Different rates of accumulation and depuration between the soft and hard tissues probably reflect the different mechanisms of binding and regulation of Cu and Zn between the soft tissues and shells of cockles. At the end of depuration, the concentrations of Cu and Zn in the soft tissues were only 1.71 and 1.75 times higher than prior to the exposure, respectively. Thus, no significant difference was found in the depuration level between Cu and Zn. Hard tissues showed that the levels of Cu and Zn are similar to those before the exposure. This indicated the slow rates of accumulation and depuration in the shells as compared to the soft tissues of *A. granosa*. The condition index of *A. granosa* could be used as a potential physiological indicator of metal pollution. The capabilities to accumulate Cu and Zn and to depurate both metals in the soft tissues indicate that *A. granosa* is a potential biomonitoring organism for its health assessment using the condition index.

Keyword: *Anadara granosa*; Cu and Zn exposure; Laboratory studies; Accumulation and depuration of Cu and Zn in the cockles