EFFECTS OF CONCENTRATION AND BODY SIZE ON THE BIOACCUMULATION OF MERCURY ON THE ARK COCKLES ANADARA ANTIQUATA

Abstrak

EFFECTS OF CONCENTRATION, AND BODY SIZE ON THE BIOACCUMULATION OF MERCURY ON THE ARK COCKLES ANADARA ANTIQUATA. The kinetics of mercury bioaccumulation on the ark cockles Anadara antiquata were investigated by using radiotracer. An aquaria experiments applied to two groups of cockles, that were smaller (10-20mm) and bigger cockles (35-45 mm), three individuals each, with two replications. Four Hg2+ concentration (0.0025; 0.005; 0.01; and 0.02 Î¼g.L-1) with 0.5 Bq.L-1 of 203Hg2+ were treated to both groups. The experiments of bioaccumulation lasted for 14 days, continued with 5 days depuration treatments. The observed variables were Bioconcentration Factor (BCF), uptake rates, efflux rates, contents of mercury in the body, and elimination rates of mercury. The models to predict BCF and elimination rates also had made. The results showed that Hg2+ bioaccumulation on smaller cockles was higher than bigger cockles. The increased of Hg2+ concentration in the water decreased the BCF on both groups. By the steady state of exposure period, the Bioconcentration Factor (BCF) of Hg was 775,532 on smaller cockles, and 378,708 on bigger cockles. The increased of Hg2+ concentration in the medium effected the increased ofHg2+ efflux rates, and Hg2+ contents in the body on both groups, but decreased the uptake rates on bigger cockles. There were no significant differences of Hg2+ retention percentage during depuration time on both groups.