Abstract

The circadian rhythm and ammonium and phosphorus excretion rates (AER and PER, respectively) of sandfish at 20, 26 and 32 ppt were determined. Sandfish were obtained from Suclaran, Guimaras and acclimated under laboratory conditions for 2 weeks prior to the experiment. In order to measure circadian rhythm, six sandfish weighing 90-250 g were placed in 50-L fiberglass tanks. Samples were obtained every 2 h. For AER and PER in varying salinity levels, sandfish were placed in airtight containers. Samples were taken before and after the 5-h experiment. The samples were then analyzed using HACH 2800 Spectrophotometer. Analysis showed that the values obtained from the PER of sandfish were too low to be considered significant. Sandfish showed a bimodal circadian rhythm in terms of AER, with peaks occurring at 0030 H (0.04mg/h) and 0830 H (0.035 mg/h). The AER of sandfish at 20 ppt was very erratic giving insignificant correlation ($p > 0.05$) between AER and body weight (BW) ($r= 0.62$.) There was a significant relationship ($p < 0.05$) between AER and BW of sandfish at 26 ppt (= 0.92). Moreover, there was a significant relationship ($p < 0.05$) between AER and BW of sandfish at 32 ppt ($r = 0.79$). The AER of sandfish is significantly lower ($p < 0.05$) at 26 ppt as compared to the AER at 32 ppt thereby indicating a response to salinity stress by conserving energy and limiting metabolic functions.

Keywords: Holothuria scabra, sandfish, physiological response, ammonium excretion rate, phosphorus excretion rate, salinity response