

# **Evaluation of crystalline amino acids as potent stimulatory chemoattractants for the slipper lobster *Thenus orientalis***

## **ABSTRACT**

Intensive research on the effectiveness of chemoattractants has been widely explored to improve the feed qualities in expanding crustacean farming. Taste preferences in slipper lobster remained unknown despite their significant contribution to the lobster fisheries. Chemoattractants allow better performance in aquaculture species by increasing food attractiveness and palatability. Amino acids (AA) have been leading in previous research on crustacean feeding behavior. Given that slipper lobster possesses chemoreceptors to detect and orient towards food, this study investigated an approach to identify the AA with the most potent chemoattractant in eliciting a response from slipper lobster. Behavioral assays were performed to evaluate the responses of slipper lobster *Thenus orientalis* (carapace length,  $52.34 \pm 1.52$  mm) on 15 crystalline AA and three derivatives of AA (DAA) at three concentrations between  $10^{-1}$  and  $10^{-3}$  M as test substances (TS). Meretrix sp. extract was used as a positive control and clean filtered seawater as a negative control. The behavioral responses of 14 *T. orientalis* were evaluated based on their antennular flicking rate, third maxillipeds activity, and substrate probing by the pereopods. *T. orientalis* responded to the solutions of single AA down to a concentration of  $10^{-3}$  M, excluding histidine and serine. The behavioral activity displayed by *T. orientalis* increased with the TS concentrations. L-glutamic acid monosodium salt monohydrate, betaine, and glycine solutions elicited the most behavioral responses, whereas histidine exhibited the lowest behavioral responses. Conclusively, L-glutamic acid monosodium salt monohydrate, betaine, and glycine can be potential chemoattractants for *T. orientalis*.