Effect of Biogenic Amines and Modulation by K^+ plus NH_4^+ of (Na^+, K^+)-ATPase Activity in the Microsomal Fraction from the mangrove Blue Crab *Cardisoma guanhumi* (Latreille 1825).

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INTRODUCTION: *Cardisoma guanhumi*, also known as the blue land crab or "guaiamum", specifically in Brazil, is a typical inhabitant of mangroves. The invertebrate fauna of mangrove forests consists primarily of decapod crustacean species, which are exposed to variable salinities, elevated temperatures and desiccation. Due to its abundance, this land crab plays a significant role in the dynamics of this ecosystem. **OBJECTIVES**: To analyze modulation by biogenic amines and modulation by K^+ plus $NH4^+$ of (Na^+,K^+)-ATPase from gill tissue of *C. guanhumi* to obtain information for broadening the understanding of the species' physiological and biochemical adaptions. **MATERIAL AND METHODS:** (Na^+, K^+)-ATPase activity was measured continuously in the presence of the exogenous polyamines putrescine, spermine, spermidine, octopamine and dopamine, using the PK/LDH coupled system. For K^+ and NH_4^+, ATPase activity was estimated using a GAPDH/PGK-linked system coupled to the reduction of NAD^+ at 340 nm and 25° C. **RESULTS AND DISCUSSION**: The exogenous polyamines had no significant effect on ATPase activity of microsomal fraction of gill tissue of *C. guanhumi*. In the absence of ammonium ions maximum activity was 140.22±7.01 U/mg protein and in the presence of 20 mmol L^{-1} ammonium ions the maximum rate was 131.83 ± 6.59 U/mg protein. In the absence of K^+, ATP hydrolysis ATP showed negative cooperativity and maximum activity was 149.15±7.45 U/mg protein. However, at 30 mmol L^{-1} K^+ the maximum rate was estimated as 145.65±7.28 U/mg. **CONCLUSION**: No significant effects on (Na^+, K^+)-ATPase were observed in the presence of the biogenic amines at the concentrations used.

Keywords: *Cardisoma guanhumi*, Synergistic Effect, Biogenic Amines.

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