Modulation of (Na\(^+\), K\(^+\))-ATPase activity in gills of the crab *Callinectes danae* acclimated to low salinity.

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During the acclimation of marine crabs to dilute media, one strategy is to increase gill (Na\(^+\),K\(^+\))-ATPase activity. Salt content and osmotic stress can affect intracellular polyamine concentrations, and thus interfere with (Na\(^+\),K\(^+\))-ATPase activity. In this study, we examined the effect of exogenously added polyamines on gill (Na\(^+\),K\(^+\))-ATPase activity from *C. danae* acclimated to low salinity. Crabs were collected from Ubatuba Bay and acclimated to 15 ‰ salinity for up to 10 days. The posterior gills were dissected, homogenized and centrifuged at 20,000 g. The supernatant was then centrifuged at 100,000 g, and the resulting pellet was re-suspended in the homogenization buffer (10 mL/g wet tissue). ATPase activity was assayed at 25 °C using a PK/LDH or PGK/GAPDH linked system in which ATP hydrolysis was coupled to NADH (NAD\(^+\)) oxidation (reduction) at 340 nm. Spermine, spermidine and octopamine inhibited ATPase activity while putrescine and dopamine had negligible effects. ATP hydrolysis followed Michaelian kinetics in the presence of spermidine. Affinity for sodium ions decreased 4-fold in the presence of spermine, spermidine and octopamine.

Keywords: (Na\(^+\),K\(^+\))-ATPase, *Callinectes danae*, polyamines.

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