

## Ca<sup>2+</sup> TRANSPORT AND HEAT RELEASED BY THE SARCOENDOPLASMIC RETICULUM Ca<sup>2+</sup>-ATPASE OF ACCLIMATED GOLDFISH

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Goldfish (*Carassius auratus*) present the ability to survive at low temperature maintaining a swimming behavior that suggests adaptations in the muscle physiology. Ca<sup>2+</sup> plays an important role for the muscle contraction-relaxation cycle and is maintained at the low micromolar range in the cytoplasm by the Ca<sup>2+</sup>-ATPase. The contribution of Ca<sup>2+</sup>-ATPase to the acclimation process is not well understood. To assess this point, we acclimated goldfish at 5°C and 25°C during one week and studied kinetic parameters for enzyme isolated from muscle from cold-acclimated (CA) and warm-acclimated (WA) fish including Ca<sup>2+</sup> uptake, ATPase activity and the heat released during the ATP hydrolysis. We found that endoplasmic reticulum vesicles derived from CA fish present a higher ability to draining Ca<sup>2+</sup> when assayed at low temperature (5°C) compared to control animals. At 25°C the heat released during the ATP hydrolysis by the Ca<sup>2+</sup>-ATPase from CA is lower compared with control animals, but this difference was not observed when the measurements were performed at 35°C. Our results suggest that the Ca<sup>2+</sup>-ATPase could be a target enzyme involved in the acclimation process.

This work was supported by CNPq, FAPERJ and PRONEX

Key words: Ca<sup>2+</sup>-ATPase, goldfish, acclimation and heat.