

The O₂ Consumption by *Crithidia deanei*, Trypanosomatid Protozoa Harboring a Symbiont Bacteria Like

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Symbiosis in trypanosomatids is characterized by the presence of an obligatory intracellular bacterium, which has co-evolved with the host protozoa through a mutualist relationship. These relationships constitute an excellent model to study organelle origin and cellular evolution. In *Crithidia deanei*, the endosymbiont promotes morphological alterations and sustain intense metabolic changes with its hosts, supplying amino acids, hemine and polyamines. Analyzing the rates of O₂ consumption, we observed that aposymbiotic strain of *C. deanei* consume less O₂ when compared with the wild strain. Recently, we observed higher rates of O₂ consumption by mitochondrial fraction when compared to the symbionts. These results suggest that the symbiotic bacteria shall influence in the oxidative metabolism of the host protozoa. Verifying the energetic metabolism of wild strain *C. deanei* in a concentration of 5 x 10⁵ cels/mL, we observe no effect of oligomycin (titrated from 0.5 to 10 µg/mL) indicating that no ATP synthesis is coupled to respiration. The proton ionophore FCCP (titrated from 0.125 to 4 µM) promoted an increase in the oxygen consumption of only 30 % showing that a large portion of respiration is not under strong control of proton motive force (Δp). Nevertheless, a cyanide sensitive respiration of 80% (from 1 µM to 10 mM) was observed indicating that most of oxygen reduction occurs is catalyzed by a cytochrome oxidase. In this moment we are investigating the O₂ consumption by the aposymbiotic strain and by mitochondrial and symbiotic fraction, in order to identify respiration processes of the symbiotic bacteria and its influences in host protozoa. This work was supported by: CAPES, CNPq and FAPERJ.

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