

Tolerance of bivalve mollusc hemocytes to variable oxygen availability: a mitochondrial origin?



Bivalve molluscs survive lack of oxygen and may present cellular characteristics allowing tolerance to oxygen deprivation. The objective of the present work was to determine in vitro responses of circulating cells (i.e., hemocytes) of Pacific oyster, *Crassostrea gigas*, to oxygen deprivation by analysis of mitochondrial membrane potential ($\Delta\Psi_m$) and reactive oxygen species (ROS) production. Hemocytes submitted to oxygen deprivation showed a reduced ROS production and an increased $\Delta\Psi_m$. Confrontation of present results with recently reported findings allows us to hypothesize the existence of an alternative mitochondrial reductase, and the involvement of mitochondrial potassium channel in maintenance of $\Delta\Psi_m$. Tolerance of bivalve hemocytes to variable oxygen availability appears, at least partially, related to mitochondrial specificities.

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