

## Sensitivity of *Steindachneridion parahybae* Mature Oocytes versus Embryos at Low Temperature

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**Abstract :** Surubim-do-Paraíba, *Steindachneridion parahybae* is a species of South American fish in critical conditions of extinction. Researches have been developed with the objective of conserving the biological material of this species. We evaluated the cooling of mature oocytes in the cryoprotective solutions containing the following alcohols: methanol, Propylene glycol and DMSO, each at concentrations of 1M, 2M and 4M, totaling nine treatments. After being submitted to treatments, the oocytes were maintained for 120 minutes in cooling to  $-5.52 \pm 2.58^{\circ}\text{C}$ . A sample of oocytes was submitted to negative control (NC), kept in 90% L-15 solution, and positive control (PC), fertilized and taken directly to the incubator. Fertilization and hatching rates were evaluated. In order to compare the sensitivity of oocytes to embryos of the same species, the embryos maintained as CP in the previous assay were used in the free-flow stage (about 22 hours post fertilization) and submitted to the same treatments (prepared in distilled water) and also cooled for 120 min. The evaluation was done by the hatch rate. There was no fertilization rate of the oocytes submitted to the cooling with propylene glycol; the other cryoprotectants presented values of at most 3.7% of fertilization (Methanol 1M), and no treatment completed development until hatching. The cooled embryos had a significant percentage of normal larvae in all treatments, but inversely proportional to the increase in the concentration of the alcohols. DMSO 1M was the most promising treatment for embryo cooling, with  $41.7\% \pm 20.2$  of normal larvae, while mature oocytes were highly sensitive to cold.

**Keywords :** cryoconservation, cooling, embryos, freezing, oocytes, south American fish

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