Summary Cryopreservation of mammal embryos has been technically feasible for years, but morphological injuries still persist in the fish embryos during the cryopreservation. Thus, the objective of the present study was to describe these freezing injuries in the embryos of *Piaractus mesopotamicus* .
Two hundred and twenty-five embryos were collected at the post-gastrula stage and assigned into four treatments with sucrose at 8.5, 17.0, 25.0 and 34.0% associated to the methanol at 9.0%. The control was prepared with only distilled water. The gradual decrease in the temperature was 0.5 ºC/min. After the seeding stage, the fish embryos were stored into liquid nitrogen at -33 ºC. Thereafter, they were thawed for evaluating the percentage of hatching, and the samples collected from every treatment were submitted to scanning electron microscopy for the morphological analyzes. The micrographic images showed substantial alterations in the embryo morphology under the highest concentration levels of sucrose. These solutions did not avoid the formation of ice crystals which incited the deformities and killed the fish embryos, but the reduced level observed in the morphological structure of the fish embryos treated with sucrose at 17.0% in association to methanol at 9.0% is a compelling argument for additional studies.

Keywords: cryoprotectant, *pacu,* reproduction, methanol, sucrose, morphological

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