Sperm Cryopreservation of Blue Spotted Grouper, *Plectropomus maculatus* (Bloch, 1790)

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Abstract

Spermatozoa of Blue Spotted Grouper, *Plectropomus maculatus* were preserved under cryogenic condition in liquid nitrogen tank (-196 °C). Marine Fish Ringer (MFR), 0.1 M Trisodium Citrate (TsC), extender 251 (E 251), extender 189 (E 189) and 0.9% Normal saline (NaCl) were studied as extender. Results showed that sperm were suspended well in 0.9% NaCl, 0.1 M TsC, E 251 and E 189. The effects of three cryoprotectant compounds, Dimethyl sulfoxide (DMSO), Dimethyl acetamide (DMA) and Trehalose at three different concentrations (5, 10 and 15%) were also studied. The duration of equilibration time of 30 minutes in the cryoprotectant solutions and Programmable Freezing Control was used in the freezing procedure. Samples were stored for 45 days in liquid nitrogen before examination. Results showed highly statistical different (p< 0.01) in percentage of live cells among treatment. DMA gave the best percentage of live cells and longest motility in cryogenic condition during experiment but the other two cryoprotectant; DMSO and Trehalose had no significant different (p>0.05). The results from using different concentrations of cryoprotectant compounds showed DMA 5% was the best, with the highest percentages of live cells. On the other hand, results from the motility studied showed DMSO 5% was the best, with the highest percentages of motility among all treatments (p< 0.05). We concluded that Blue Spotted Grouper’s milt can cryopreserved by using 0.9% NaCl in DMA 5%.

Key words: Blue Spotted Grouper, *Plectropomus maculatus*, sperm cryopreservation

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