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**The effect of preserved and shipped cryopreserved semen of giant grouper (*Epinephelus lanceolatus*) in dry ice (-79° Celsius) on the total protein in semen and spermatozoa****Che Zulkifli Che Ismail, Ivan Koh Chong Chu, Shahreza Md Sheriff, Amin Safwan Adnan and Mhd Ikhwanuddin**  
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Protein is a macromolecule that plays an important role in the living organism. The role of protein is catalysing the metabolic reaction, DNA replication, responding to stimuli and shipping the molecule from point to point. The level of protein in spermatozoa is very important because it contains DNA information which can be transmitted from paternal to the next generation. The study was conducted to determine the level of total protein in cryopreserved semen and in spermatozoa of giant grouper (*Epinephelus lanceolatus*) which is preserved in dry ice (-79° Celsius) and shipped with Styrofoam box and dry ice as a refrigerant. The purpose of shipping is to use the cryopreserved spermatozoa in artificial insemination to produce hybrid grouper. The level of total protein also determined after the frozen semen are immersed back to liquid nitrogen after 24 hours and 48 hours in dry ice. The treatment in this study was 24 hours in dry ice, immersed back to liquid nitrogen after 24 hours in dry ice; 48 hours in dry ice, immersed back to liquid nitrogen after 48 hours in dry ice; and 72 hours in dry ice. The other factor in the experiment is the container for the semen are loaded: Straw and cryotube. Positive control for the experiment was the post thaw semen from liquid nitrogen, and negative control for the experiment was fresh semen. The experiment also compared the level of total protein in semen before and after adding extender and cryoprotectant and also before and after cryopreservation procedure. The level of protein is determined using Bradford method. The result of the study shows there are no significant differences ( $P < 0.05$ ) on the total protein from the semen and spermatozoa were loaded with straw and cryotube. There are significant differences ( $P < 0.05$ ) on the level of total protein in semen before and after adding with extender and cryoprotectant. However, there is no significant difference ( $P > 0.05$ ) on the level of total protein before and after adding the extender and cryoprotectant in spermatozoa. There are no significant differences ( $P > 0.05$ ) on the level of total protein in semen for all treatment and control groups. Thus, preservation and shipping the cryopreserved semen does not affect the level of total protein either in semen or spermatozoa.

**Biography**

Che Zulkifli Che Ismail served as a Research Officer at Fisheries Research Institute of Malaysia since 1995. He has expertise in marine finfish breeding including broodstocks management, larval rearing, nursing of fry and grow out. The past project that he had already done was breeding of Cobia, Asian Sea bass, Tiger Grouper and Red Snappers. Beside the marine finfish, he also has experience in breeding of tropical abalone, green muscle and giant freshwater prawn. Besides aquaculture field, he also has experience in ecological study especially on the pollution of pesticide in the water, sediment and aquatic animals. Currently, he is studying PhD in the University Malaysia Terengganu, Kuala Terengganu, Malaysia. His current study is the cryopreservation of Giant Grouper spermatozoa in order to produce the hybrid grouper fry.

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