Accepted Manuscript

Effects of trehalose supplementation on cell viability and oxidative stress variables in frozen-thawed bovine calf testicular tissue

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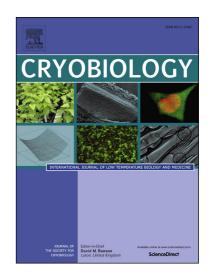
PII: S0011-2240(15)00055-3

DOI: http://dx.doi.org/10.1016/j.cryobiol.2015.03.004

Reference: YCRYO 3588

To appear in: *Cryobiology*

Received Date: 22 January 2015 Accepted Date: 11 March 2015



Please cite this article as: X-G. Zhang, Y-H. Wang, C. Han, S. Hu, L-Q. Wang, J-H. Hu, Effects of trehalose supplementation on cell viability and oxidative stress variables in frozen-thawed bovine calf testicular tissue, *Cryobiology* (2015), doi: http://dx.doi.org/10.1016/j.cryobiol.2015.03.004

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ACCEPTED MANUSCRIPT

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Abstract

Trehalose is widely used for cryopreservation of various cells and tissues. Until now, the effect of trehalose supplementation on cell viability and antioxidant enzyme activity in frozen-thawed bovine calf testicular tissue remains unexplored. The objective of the present study was to compare the effect of varying doses of trehalose in cryomedia on cell viability and key antioxidant enzymes activities in frozen-thawed bovine calf testicular tissue. Bovine calf testicular tissue samples were collected and cryopreserved in the cryomedias containing varying doses (0, 5, 10, 15, 20 and 25%; v/v) of trehalose, respectively. Cell viability, total antioxidant capacity (T-AOC) activity, catalase (CAT) activity, superoxide dismutase (SOD) activity, glutathione (GSH) content and malondialdehyde (MDA) content were measured and analyzed. The results showed that cell viability, T-AOC activity, SOD activity, CAT activity and GSH content of frozen-thawed bovine calf testicular tissue was decreased compared with that of fresh group (*P* < 0.05). MDA content in frozen-thawed bovine calf testicular tissue was significantly increased compared with

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