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Revised

Inhibition of apoptosis by caspase Inhibitor Z-VAD-FMK improves cryotolerance of in vitro derived bovine embryos

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Abstract

The aim of this work was to evaluate whether the treatment with the pan-caspase inhibitor benzyloxycarbonyl-Val-Ala-Asp-fluoromethyl ketone (Z-VAD-FMK) during cryopreservation and post-warming in vitro culture improves cryotolerance of bovine in vitro produced (IVP) embryos. Abattoir derived bovine oocytes were in vitro matured, fertilized and cultured according to standard procedure. On Day 7, embryo yields were assessed and blastocysts randomly divided in 2 groups: vitrification and post-warming culture in the absence (n=184) or presence (n=156) of 20 µM Z-VAD-FMK. Resistance to cryopreservation was evaluated post-warming culture by assessing the survival rate and hatching rate. Differential staining combined with in situ terminal deoxynucleotidyl transferase mediated dUTP nick end labelling (TUNEL) technique was performed