

# Accepted Manuscript

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PII: S0093-691X(17)30572-1

DOI: [10.1016/j.theriogenology.2017.11.031](https://doi.org/10.1016/j.theriogenology.2017.11.031)

Reference: THE 14363

To appear in: *Theriogenology*

Received Date: 19 July 2017

Revised Date: 12 October 2017

Accepted Date: 23 November 2017

Please cite this article as: Pero ME, Zullo G, Esposito L, Iannuzzi A, Lombardi P, De Canditiis C, Neglia G, Gasparrini B, Inhibition of apoptosis by caspase inhibitor Z-VAD-FMK improves cryotolerance of in vitro derived bovine embryos, *Theriogenology* (2017), doi: 10.1016/j.theriogenology.2017.11.031.

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

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### **1 Abstract**

2

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

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