Resumos do 55º Congresso Brasileiro de Genética • 30 de agosto a 02 de setembro de 2009
Centro de Convenções do Hotel Monte Real Resort • Águas de Lindóia • SP • Brasil
www.sbg.org.br - ISBN 978-85-89109-06-2

Expression of genes involved in the control of apoptosis and cellular stress in bovine embryos cultured with CLA (*trans-10, cis-12*)

Batista, RITP[1,*]; Barbosa, NR[1]; Camargo, LSA[2]; Gama, MA[2].; Carvalho, BC[3]; Campos Jr, PHA[4]; Pereira, MM[1]; Miranda, FM[4]; Viana, JHM[2]

[1]Universidade Federal de Juiz de Fora, Juiz de Fora, MG. [2]Embrapa Gado de Leite, Juiz de Fora, MG. [3]EPAMIG (Empresa de Pesquisa Agropecuária de Minas Gerais). [4]CES/JF (Centro de Ensino Superior de Juiz de Fora)
*ribrio@yahoo.com.br

Keywords: Blastocysts, Real-Time PCR, Free Radicals, Bcl-2, Hsp70.1

The use of the *trans-10, cis-12* isomer of the conjugated linoleic acid (CLA) is an important alternative for the control of excessive lipid accumulation in bovine embryos produced *in vitro*, once the lipid content negatively affects the post-cryopreservation survival rate. However, the metabolism of this fatty acid in peroxisomes can increase the intracellular levels of free radicals, with detrimental effects on embryo quality. The aim of this study was to evaluate the effect of the *trans-10, cis-12* CLA isomer during *in vitro* culture of bovine embryos on expression of genes involved on apoptosis control (Bax and Bcl-2) and cellular stress (Hsp70.1 and PRDX). Cumulus-oocyte complexes (COCs) obtained from slaughterhouse ovaries were matured and fertilized in vitro. Presumptive zygotes were randomly distributed into two groups (control group: without CLA; and CLA group: culture medium supplemented with 100 µL of CLA *trans-10 cis-12* [*Matreya, ref. 001249*]). The basic media for all treatments was CR2aa plus 10% fetal bovine serum. For analysis of the target transcripts, 60 blastocysts (control group: 30 and CLA group: 30) divided into three pools were used. After RNA extraction, reverse transcription was performed. The cDNA obtained was subjected to Real-Time PCR using the gene β-actin and GAPDH as endogenous controls for the subsequent analysis of expression by *REST*© software. The relative abundance of Bax (0.76 ± 0.23), Bcl-2 (1.25 ± 0.26), Hsp70.1 (0.77 ± 0.39) and PRDX1 (0.86 ± 0. 55) transcripts in embryos cultured with CLA did not differ from control embryos (P> 0.05). In conclusion, supplementation with CLA *trans-10, cis-12* in the medium does not affect the expression of these genes in bovine embryos.

Financial support: CNPq and Fapemig.