

Effect of Trans-10, Cis-12 Conjugated Linoleic Acid (CLA) on Post-Thaw Viability of Biopsied Bovine Embryos.

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Bovine embryos produced in serum-containing media are characterized by an excessive lipid content in embryo cells together with a high susceptibility to cryopreservation. This susceptibility is enhanced in biopsied embryos. Our aim was to improve in vitro produced (IVP) embryos resistance to micro-manipulation and cryopreservation by supplementing serum-containing media with CLA. CLA effect on lipid deposition and embryonic development was also tested. After in vitro maturation and fertilization (IVF day=D0), zygotes were cultured in granulosa cells+M199+10% serum+100 μ M GSH with (CLA group n=925) or without (Control group n=822) 100 μ M CLA. Samples of D7/D8 embryos were observed under Nomarsky microscopy for lipid droplets (LD) evaluation while others were biopsied and vitrified. Post-thaw embryo viability was determined at 0, 24 and 48 h of culture. Data (9 sessions) were analyzed using ANOVA. CLA supplementation did not influence cleavage, D7/D8 embryo rate or quality. However, CLA cultured embryos showed smaller LD ($P<0.001$) and lower fat embryo index ($P<0.001$) than Control. Embryo post-thawed integrity was higher ($P=0.02$) in CLA than in Control group. After 24 h of culture, expansion rate was higher ($P=0.003$) in embryos from CLA group than in Control. Results showed that CLA supplementation to serum-containing media decreased embryo cytoplasm lipid deposition without interfering on embryo producing rates and quality. CLA presence improved the resistance of IVP embryos to micromanipulation and cryopreservation.

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