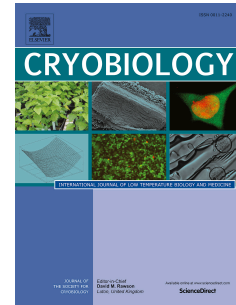


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Ovine Oocyte Vitrification

An Improved Method for Vitrification of in Vitro Matured Ovine Oocytes; Beneficial Effects of Ethylene Glycol Tetraacetic acid, an Intracellular Calcium Chelator

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Abstract

Vitrification affects fertilization ability and developmental competence of mammalian oocytes. This effect may be more closely associated with an intracellular calcium rise induced by cryoprotectants. The present study aimed to assess whether addition of Ethylene Glycol Tetraacetic acid (EGTA) to vitrification solution could improve quality and developmental competence of in vitro matured ovine oocytes. Vitrified groups were designed according to the presence or absence of EGTA and/or calcium in base media, including: mPB1⁺ (modified PBS with Ca²⁺), mPB1⁻ (modified PBS without Ca²⁺), mPB1⁺/EGTA (mPB1⁺ containing EGTA), mPB1⁻/EGTA (mPB1⁻ containing EGTA). In vitro development, numerical chromosome abnormalities, hardening of zona pellucida, mitochondrial distribution and function of viable oocytes were evaluated and compared between groups. Quality of blastocysts was assessed by differential and TUNEL staining. Also, mRNA expression levels of six candidate genes (KIF11, KIF2C, CENP-E, KIF20A, KIF4A and KIF2A), were quantitatively evaluated

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