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Influence of the Number of Cumulus Cells and the Expression of LH Receptor, Caspase 3, and P53 in Various Patterns of Cumulus Cells with the Success in Oocyte Maturation in the Process of in Vitro Maturation after Vitrification

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Abstract: To analyze the influence of cumulus cell and the expression of LH receptor, caspase 3, p53 on the success in oocyte maturation in the process of in vitro maturation after vitrification. Method: The research subjects were 60 oocyte of germinal vesicle stadium of cows (*Bostaurus*), divided into two groups: control group consisted of non-vitrified oocyte and exposure group consisted of vitrified oocyte (30% of v/v ethylene glycol, 18% of w/v Ficoll-0, and 0.3 M sucrose). Oocyte was divided into 3 groups (A,B and C) based on the cells pattern of oocyte cumulus in the germinal vesicle stadium of 2-8 mm with three layers of cumulus cells. The examination of the number of cumulus cells, using neubauwer calculating room and the expression of LH receptor, caspase 3, and p53 with ihc method, was done. After that, ivm were performed and their development were evaluated in 24 hours (first polar body). Result: Statistically, number of cumulus cells and expression of LH receptor had no significant correlation with maturity *(p>0.05)*. Statistically, expression of caspase 3 and p53 had significant correlation with maturity *(p<0.05)*. Conclusion, The expression of caspase 3 and p53 determined the success in oocyte maturation in the process of ivm after the vitrification
Keywords: Number of cumulus cell, lh receptor, caspase 3, p53, ivm,vitrification.

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