P-110: Effect of Increasing Amount of Oocyte Secreted Factors on Cumulus Expansion of Bovine Cumulus-Oocyte Complexes

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Background: *In vitro* maturation is a good method to decrease cancer risk of superovulation by gonadotropin hormones. A paracrine effect of oocyte secretions on oocyte developmental competence is under investigation. Apart from oocyte maturation, ovulation *in vivo* requires a precise control of extracellular matrix modification. Cumulus cells secrete hyaluronan to form a muco-elastic extracellular matirx with proteins derived from the serum and the follicle (cumulus expansion). This matrix structure is of importance for oocyte extrusion from the follicle and for pick-up by the fimbria. In addition, a function of selective barrier for sperm has also been reported for this matrix structure. Oocyte secreted factors (OSFs) may be involved in cumulus expansion of oocytes. This study was conducted to identify if the increasing amount of native OSFs improve the rate of cumulus expansion of bovine and ovine oocytes.
Materials and Methods: Collected ovaries from the local abattoir were transported to the laboratory in PBS at 30-35°C. The cumulus - oocyte complexes (COCs) of follicles were recovered by aspiration. Some COCs were denuded using hyaluronidase and vortexing. Then COCs surrounded with at least three layers of cumulus cells were co-cultured with denuded oocytes (Dos) in a 50 µl droplet of oocyte cultue medium (OCM). The selected COCs were randomly co-cultured in four groups (COCs cultured alone, with Dos in 1:1, 1:3 and 1:6 ratios. After an incubation period (24 hours), cumulus expansion was assessad.
Results: In bovine COCs, complete cumulus expansion rate was 80% (control), 75%, 72% and 76%, respectively.
Conclusion: The analysis of data showed that the rate of complete expanded cumulus in treatment groups was not significant when compared with control group. Thus, although these results show that increasing amount of native OSFs does not improve cumulus expansion of bovine COCs, the other aspects of oocyte maturation at molecular level as well as fertilization and preimplantation embryogenes should be more investigated for better understanding the effects of OSFs in cattle
Keywords: Oocyte-Secretsd Factors, Bovine, *In Vitro* Maturation, Cumulus Expansion

P-111: An Attempt to Facilitate the Production of Transgenic Mouse As A Model for Gene Therapy of Gaucher Disease

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Background: Gaucher disease is an autosomal recessive inherited lysosomal storage disorder that affects many of the body's organs and tissues by defective function of the catabolic enzyme β-glucocerebrosidase. Gene therapy is one of the efficient ways for treatment of this disease. Due to the lack of appropriate animal models, in the field of gene therapy little progress has been done.
Materials and Methods: In this study the 845 bp fragment of the GBA gene (mutant glucocerebrosidase gene) was transferred into the male pronucleous of mouse zygote by DNA pronucleous microinjection method
Results: And then it was detected in blastocyste stage by PCR and RT-PCR.
Conclusion: The finding has been reported the detection of transgene in mouse blastocyste for the first time in Iran, which will be instrumental both in developmental studies and in the generation of mouse models of human gene therapy in gaucher disease.
Keywords: Gaucher Disease, Transgenic Mouse, Pronucleous Microinjection, Animal Model

P-112: Potential Applications of Sheep Oocytes As Affected by Vitrification and *In Vitro* Aging

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Background: The present study was carried out to investigate how the interactions between aging, vitrification, and post-warming interval affect the credibility of sheep MII-oocytes for *in vitro* fertilization (IVF), intracytoplasmic injection (ICSI), and parthenogenetic activation (PA).
Materials and Methods: The vitrified-warmed oocytes, either immediately (immediate group: IG) or two hours post-warming (delayed group: DG) along with their corresponding unvitrified controls were used for assessment of (i) survival rate, (ii) meiotic spindle and chromosomal organization, (iii) ultrastructural changes, (iv) gene expression, (v) cortical granule release, and zona hardening and (vi) embryo development using IVF, ICSI, and PA.
Results: According to our results, aged oocytes had significantly higher rates of chromosome and spindle abnormalities compared to young oocytes. However after vitrification-warming, the total rates of these abnormalities were not significantly different between aged and young