

하여 난포의 발달단계별 분류에 따라 각 난포의 수를 계수하였다.

Results: 미니돼지 성장에 따른 난포의 수는 원시난포, 제1차, 제2차, 제3차 및 Graafian 난포로 구분하였으며, 출생 직후 원시난포의 수가 10,000여개 분포하였으나 돼지가 성장함에 따라 난포수가 급격히 감소하여 6개월령에서는 300여개만이 확인이 되었다. 하지만 제1차, 2차, 및 3차 난포들은 난소의 성장에 따라 급격히 늘어나는 것을 확인할 수 있었다. 특히 제2차 난포의 경우 유의하게 증가하는 경향을 보였다.

Conclusions: 본 연구를 통하여 미니돼지 난소의 성장단계에 따른 번식학적 연구의 기초 자료가 될 수 있을 것으로 사료된다.

This work was supported by the Research Project on the Production of Bio-Organs.

P-9 Effects of Bovine Somatotropin (bST) on the Microenvironments of Uterus at day 7 of Estrus Cycle in Hanwoo During Superovulation Treatment

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Background & Objectives: This study was performed to determine the effect of bovine somatotropin (bST) treatment on the concentration of plasma hormonal levels, the production of embryos, and the expression of the specific gene in uterine epithelial cells (BUEC) at day 7 of estrus cycle (D-7) in Korean native beef cattle (Hanwoo) during hyperstimulation.

Method: For superovulation treatment, Hanwoos were treated with controlled internal drug release (CIDR) combined with bST (bST, n=4) or without bST (control, n=6). To analyse specific gene expression, RAPD-PCR, cloning, sequencing, and semi-quantitative RT-PCR were performed.

Results: The concentration of plasma IGF-I level was significantly higher in bST group compared to that of control group at day 7 of estrus cycle ($p<0.01$). The number of excellent quality embryos was significantly higher in bST group than that of control group ($p<0.01$). After random amplified polymorphic DNA-polymerase chain reaction (RAPD-PCR) using 40 random primers, we identified four specific bands in D-7 BUEC from bST group. Result of DNA sequencing, a 584 bp band of the specific gene was obtained. Basic Local Alignment Search Tool (BLAST) searches revealed that it had homology with 7 bovine expressed sequencing tags (ESTs) ranged from 84% to 89%. The specific gene was expressed in the fetus brain (7 months, ♂), fetus ovary (4 months, ♀), D-7 BUEC of bST group, but not in control group by semi-quantitative RT-PCR.

Conclusions: Based on these results, bST treatment during superovulation treatment was an effective method to increase the plasma hormonal levels and to produce high quality of embryos because of the

stimulation of the specific gene expression affecting positively to the microenvironment of uterus.

P-10 Effect of Ethane Dimethane Sulfonate (EDS) on the Epididymal Apoptosis in Male Rat

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Background & Objectives: Ethane dimethane sulfonate (EDS), a Leydig cell specific toxicant, has been widely used to create the reversible testosterone withdrawal rat model. The maintenance of epididymal structure and function is dependent on testosterone. EDS model shown that testosterone withdrawal from the rat testis results in increased epididymal apoptosis. However, the mechanism by which EDS stimulates cell death remains unknown. The aim of present study was to monitor the apoptosis and reproduction related gene expression profiles in epididymis up to 7 weeks after EDS injection.

Method: Adult male rats (350~400 g) were injected with a single does of EDS (75 mg/kg i.p.) and sacrificed on weeks 0, 1, 2, 3, 4, 5, 6 and 7. The transcriptional activities of the genes responsible for apoptosis were evaluated by semi-quantitative RT-PCRs.

Results: The transcript levels of both estrogen receptor alpha (ER α) and estrogen receptor beta (ER β) were higher than control level on week 1. The aromatase receptor (AR) message level increased significantly weeks 1 and 2, then returned to control level on week 3. In contrast, expression of cytochrome P450 aromatase (P450arom) decreased significantly during weeks 1~3, then went back to control level on week 4. The mRNA level of Fas ligand increased significantly during 1~2 weeks, then returned to control level on week 3. Similarly, Fas receptor message increased significantly during 1~3 weeks, then reverted to control level on week 3. Expression of Bax significantly increased on week 7 while Bcl-2 expression decreased significantly on the same week.

Conclusions: The present study clearly indicated that EDS treatment induced epididymal apoptosis. Epididymal apoptosis would appear to be mediated through the actions of the Fas receptor and its ligand, which are both up-regulated after EDS administration. In contrast, the Bcl-2 family of proteins does not appear to play an initiating role in epididymal apoptosis. In conclusion, EDS injection model might be useful to understand the apoptosis mechanism of germ cells and somatic cell in male reproductive organs.

P-11 Ovarian Reserve after Removal of Ovarian Tumor

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Background & Objectives: 가임기 여성에서 난소종양 제거술 후 난소 배란능의 변화를 예측하기 위