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Identification of Pregnancy Specific Expression mRNA in Mini Pig Ovary

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The micro pigs are widely used in the field of researchon the organ transplantation. They share anatomic and physiologic characteris-tics with humans that make them a unique and viable model for bio-medical and biotechnology research. Theirorgans such as the liver, pancreas, kidney and heart have also made these species the primary species of interest as organ donors for Xeno-grafted procedures. Dif-ferentially expressed gene (DEG) refers to a gene that is differentially expressed at the mRNA level in two or more samples. Discovering DEGs is very important for understanding the biological systems and unra-veling of the mechanisms that lead to disease since DEGs usually indi-cate changes in the equilibrium of biological processes. In order to iden-tifythe molecular basis of ovary development, the DEGs that participate in mammalian pregnancy will have to be identified.

We have been investigating the specific gene expression of micro pig during early pregnancy. The ovary of normal and pregnancy (30 days, 60 days) mini pig was collected under aneathesia. Each Total RNA was extracted by Trizol reagent. First strand cDNA is synthesized by Oligo dT-ACP, which binds to the poly A tail region of mRNA. At this temperature, dT-ACP cannot bind to its template. Only the 3'tar-getsequence region of the arbitrary ACP binds to the first strand cDNA and synthesizes the second strand of cDNA. At this temperature, dT-

ACP and arbitrary ACP can not bind to the first stand cDNA. Only the second strand cDNAs synthesized by the first PCR step are specifically amplified with ACP primers that have a 100% match to the second strand cDNA. Differential expression levels of mRNA fragments observed on agarose gels. One hundred twenty primer were tested. Sixteen specific expression genes (1~16DEGs) were amplified. A 13 (number: DEG 1, 3~9, 11~14, 16) of 16 were cloned into pCR2.1 vector and sequenced. The identities of the DEGs or their putative biological functions were inferred by screening the GenBank database for homologous sequences by BLAST analysis. These were the sulfotransferase and PKC potentiated PP1 inhibitor. Now we are investigating Real time PCR and Northern blot analysis. Thus, this research will be able to understand the complex physiology of implantation and xeno-transplantation.

Key words) *Mini pig, Differentially Expressed Gene(DEG)*