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Identification of Differentially Expressed Genes in the Uterine Endometria on Day 12 of the Estrous Cycle and Pregnancy in Pigs

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Maternal recognition of pregnancy which is critical for embryonic loss occurs approximately on Day 12 of pregnancy in pigs. The presence of the conceptus in the uterine lumen during this period changes the uterine endometrial function to prepare for attachment of the conceptus to endometrial epithelial cells and to maintain luteal function in the ovary. However, not much is known about the genes expressed in uterine endometria in the presence of the conceptus. Thus, to initiate the study of interaction between the maternal uterus and the conceptus and implantation process, we compared genes expressed in endometria of Day 12 of pregnancy to those of Day 12 the estrous cycle to identify the genes that are differentially expressed. A new reverse transcription-polymerase chain reaction (RT-PCR)-based method that involves annealing control primers (ACPs) was employed. Using 120 ACPs, we identified and sequenced 12 of these differentially expressed genes (DEGs). Basic Local Alignment Search Tool (BLAST) searches found 9 known genes and 3 unknown genes. Further analysis of the differentially expressed genes in this study will provide insights into the cellular and molecular basis of maternal-and fetal interaction during the period of maternal recognition of pregnancy in the pig.

Key words) *Pig, Uterus, Endometrium, Pregnancy, Implantation, Differentially expressed genes*

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