P-25

Identification of Porcine Follicular Fluid Proteins of Mature and Immature Follicles in Using Proteomics

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Porcine follicular fluid (PFF) includes various biologically active proteins which can affect follicle growth and oocyte maturation. This study was to identify these proteins both mature follicles (7~8mm) in porcine follicular fluid and immature follicles (2~3mm) in porcine follicular fluid. We have used the global proteomics approach by 2-D gel electrophoresis (2-DE) and MALDI-TOF-MS to analyze the differential protein patterns between mature and unmature follicles in porcine follicular fluid. PFF proteins within isoelectric point 4.0 to 7.0 and 6.0 to 9.0 separately were analyzed in 2-D electrophoresis with 3 replications of each sample. The stained gels were scanned and calibrated at an optical resolution of 63.5 um/pixel using a GS-710 (Bio- Rad). A total of approximately 600 spots were detected in 2-D gels stained with Coomassie-blue. In the comparison of porcine mature and immature follicular fluid, a total of 17 spots were identified as differentially expressed proteins. Differentially expressed proteins were identified as albumin, Gelsolin precursor by using MALDI-TOF-MS. Our results suggest that these proteins may be important to understanding of follicle growth and oocyte maturation.

Key words) *Porcine follicular fluid (PFF), 2-D gel electrophoresis (2-DE), MALDI-TOF-MS*