



Establishment of the optimum two-dimensional electrophoresis system of ovine ovarian tissue

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ABSTRACT. Lambing performance of sheep is the most important economic trait and is regarded as a critical factor affecting the productivity in sheep industry. Ovary plays the most roles in lambing trait. To establish the optimum two-dimensional electrophoresis system (2-DE) of ovine ovarian tissue, the common protein extraction methods of animal tissue (trichloroacetic acid/acetone precipitation and direct schizolysis methods) were used to extract ovine ovarian protein, and 17-cm nonlinear immobilized PH 3-10 gradient strips were used for 2-DE. The sample handling, loading quantity of the protein sample, and isoelectric focusing (IEF) steps were manipulated and optimized in this study. The results indicate that the direct schizolysis III method, a 200- μ g loading quantity of the protein sample, and IEF steps II (20°C active hydration, 14 h \rightarrow 500 V, 1 h \rightarrow 1000 V 1 h \rightarrow 1000-9000 V, 6 h \rightarrow 80,000 VH \rightarrow 500 V 24 h) are optimal for 2-DE analysis of ovine ovarian tissue. Therefore, ovine ovarian tissue proteomics 2-DE was preliminarily established by the optimized conditions in this study; meanwhile, the conditions identified herein could provide a reference for ovarian

sample preparation and 2-DE using tissues from other animals.

Key words: Ovine; Ovarian; Protein extraction; Bradford method; Two-dimensional electrophoresis system; PDQuest