Proteomics Application in Disease Diagnosis and Reproduction İmprovement in Cow

Authors : Abdollah Sobhani, Hossein Vaseghi-Dodaran

Abstract : Proteomics is defined as the study of the component of a cell, tissue and biological fluid. This technique has the potential to identify protein biomarkers of a disease states. In this study which was performed on bovine ovarian follicular cysts (BOFC), eight proteins are over expressed in BOFC that these proteins could be useful biomarkers for BOFC. The difference between serum proteome pattern cows affected by postpartum endometritis with healthy cows revealed that concentrations orosomucoid was decreased in endometritis. The comparison proteome of brucella abortus between laboratory adapted strains and clinical isolates could be useful to better understand this disease and vaccine development. Proteomics experiments identified new proteins and pathways that may be important in future hypothesis-driven studies of glucocorticoid-induced immunosuppression. Understanding the molecular mechanisms of effective parameters on male fertility is essential for obtaining high reproductive efficiency by decreasing cost and time. The investigations on proteome of high fertility spermatozoa indicated that expression of some proteins such as casein kinase 2 (CKII) prime poly peptide and tyrosine kinase in high fertility spermatozoa was higher compared to low fertility spermatozoa. Also, some evidence has indicated that variation in protein types and amounts in seminal fluid regulates fertility indexes in dairy bull. In conclusion, proteomics is a useful technique for discovering drugs, vaccine development, and diagnosis disease by biomarkers and improvement of reproduction efficiency.
Keywords : proteomics, reproduction, biomarker, immunity