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Analysis and Profiling of the Bovine Sperm Proteome in University of Kufa, Al-Najaf, Iraq

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Abstract

This study was intended to identify the different types of amino acids and whole proteins of the healthy bovine sperm. Two methods applied for characterizing the bovine sperm. Firstly, the whole sperm lysate was extracted and digested and then run in mass spectrometry. Secondly, the total sperm lysate was run in SDS page gel, and then the bands were stained with coomassie stain. The bands were cut and digested to extract the whole amino acids. And finally, it was also run in mass spectrometry. The results revealed that several proteins identified in healthy bovine sperm. These were involved in different binding proteins, glycoproteins, transmembrane, and soluble proteins. These proteins might play a role in sperm activity. It might also be related to the behaviour of sperm during the formation process in testis and migration of sperm via the male reproductive tract and also inside the female reproductive tract after mating and fertilization. Interestingly, gel bands had more abundance of protein compared to the whole lysate, which disappeared fewer proteins. Through combing both methods, it was observed that bovine sperm had several proteins which should be investigated in future studies to understand more about the metabolism and physiology of sperm. In conclusion, this study approved that bovine sperm has essential different and uncharacterized proteins which might answer many theoretical aspects of biological and biochemical sperm migrations after the mating process.

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