

## Functional Significance of Qatari Camels Milk: Antioxidant Content and Antimicrobial Activity of Protein Fractions

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**Abstract :** Background: Camelus dromedarius camels are also called 'the Arabian camels' and are present in the desert area of North Africa and the Middle East. Recently, camel's milk has a great attention globally because of their proteins and peptides that have been reported to be beneficial for the health and in the management of many diseases. Objectives: This study was designed to investigate the antioxidant, antimicrobial activity and to evaluate the total phenolic content of camel's milk proteins in Qatar. Methods: Fresh two camel's milk samples from Omani breed and called Muhajer (camel's milk A and B) were collected on the 1st of the December. Both samples were from the same location Al- Shahaniyah, Doha, Qatar, but from different local private farms and feeding system. Camel's milk A and B were defatted by centrifugation and their proteins were extracted by acid and thermal precipitation. The antioxidant activity was determined by 2,2-diphenyl-1-picrylhydrazyl (DPPH) assay. Total phenolic compound (TPC) was evaluated by Folin-Ciocalteu reagent (FCR). On the other hand, the antimicrobial activity against eight different type of pathogenic bacteria was evaluated by disc diffusion method and the zone of inhibition was measured. Results: The of the total phenolic content of whole milk in both camel's milk A and B were significantly the highest among the protein extracts. The % of the DPPH radical inhibition of casein protein in both camel's milk A and B were significantly the highest among the protein extracts. In this study, there were marked changes in the antibacterial activity in the different camel milk protein extracts. All extracts showed bacterial overgrowth. Conclusion: The antioxidant activity of the camel milk protein extracts correlated to their unique phenolic compounds and bioactive protein peptides. The antimicrobial activity was not detected perhaps due to the technique, the quality, or the extraction method. Overall, camel's milk exhibits a high antioxidant activity, which is responsible for many health benefits besides the nutritional values.

**Keywords :** camels milk, antioxidant content, antimicrobial activity, proteins, Qatar

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