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## Characterization of llama (*Lama glama*) milk proteins

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Llamas belong to the *Camelidae* family along with camels. While camel milk has been broadly characterized, data on llama milk proteins are scarce. Previously released studies were only limited to the analysis of gross composition of milk (*i.e.* total fat, protein, or lactose content). The objective of this study was thus to investigate the protein composition of llama milk. Data were compared with those from dromedary milk, a closely related species. First, the protein concentration of llama and dromedary milk was determined. Surprisingly, the average value of protein concentration was roughly twice higher in llama milk compared with dromedary milk. Skimmed llama milk proteins were further characterized by a two-dimensional separation technique coupling Reverse Phase High Pressure Liquid Chromatography (RP-HPLC) in the first dimension with sodium dodecyl sulphate-polyacrylamide gel electrophoresis (SDS-PAGE) in the second dimension. Identification of proteins was achieved using peptide mass fingerprinting. This proven methodological approach allowed us to identify the major proteins in llama milk, namely caseins ( $\alpha_{s1}$ -,  $\alpha_{s2}$ -,  $\beta$ - and  $\kappa$ -caseins),  $\alpha$ -lactalbumin, lactoferrin, lactophorin and serum albumin. Significant quantitative and qualitative differences were observed between camel and llama milk samples.

Finally, we characterized proteins of the Milk Fat Globule Membrane (MFGM), the membrane surrounding fat in milk, in the llama species. The MFGM protein profile from llama was found to be highly similar to the MFGM protein profile from camel milk. Taken together, these data provide for the first time a thorough description of the milk protein fraction from llama, a new-world camelid.