

# Lactoferrin of camel milk of Kazakhstan

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**Abstract:** Lactoferrin is iron containing protein with molecular mass 76-80 kDa with 689 amino acids residues and two Fe<sup>3+</sup> binding centres. This relatively recently known protein has a number of properties. These are anti-bactericide activity, antiviral, anti-fungal, anti-carcinogenic, anti-inflammatory activity, antioxidant and analgesic properties. Lactoferrin raises immune response of organism and is involved in Parkinson's and Alzheimer's diseases. Lactoferrin is presented in all excretory secrets of mammals such as tear secrets, saliva, blood, urea, nasal and uterus cavity, sperm and amniotic and also in neutrophil of leucocytes. But mostly lactoferrin is presented in milk and colostrum.

Comparative survey of lactoferrin concentration in different milks showed that biggest content of lactoferrin is in camel milk. Camel milk has 30-100 times higher concentrations of lactoferrin than bovine milk. After heat treatment at 85C camel milk still contains 37% of lactoferrin while bovine milk only 1,2%. Bovine and camel lactoferrin are homological with affinity in amount of 74,9%. Amino acid compound studies showed that camel lactoferrin is rich with Met while bovine lactoferrin is rich with Val.

Camel milk is traditional food product for Kazakhstan and is accounted to be health-giving product helping to heal and to prevent many diseases. But these properties of camel milk are still not proved by scientists. We believe that lactoferrin is remarkably responsible on such properties of camel milk.

Lactoferrin used as preserving agent in food, medicines and cosmetics. Technologies of industrial purification are now developing. The number of use targets is rapidly growing. For example lactoferrin can be used in diagnostics of inflammation processes.

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