


Effect of heat treatment on the alpha-amylase, 5-lipoxygenase activities and insulin content of camel milk

Maha Hamouda

University of Gabes, Tunisia

 maha.hamouda18@gmail.com

Abstract

Several studies demonstrate the potential benefits of camel milk in many health issues and diseases with significant anti-diabetic and anti-inflammatory properties.

However, limited data are present in the literature on the thermal effect on camel milk biological activities. Thus, the aim of this study was to evaluate the changes in anti-inflammatory and alpha amylase activities and insulin content of camel milk after thermal treatment.

Methods: Camel milk were collected from the experimental herd of the Livestock and Wildlife laboratory (Arid Lands Institute, Medenine, Tunisia). Insulin ELISA Kit was procured from Demeditec (Germany). The anti-inflammatory activity and the α -amylase inhibitory activities was tested in vitro on the different heat-treated camel milk.

Results: The anti-inflammatory activity of camel milk was affected by the heat treatment at high temperature. The inhibition results of alpha-amylase as indicator for antidiabetic activity was significantly lower in boiled milk compared to fresh milk (Control).

There was also a significant difference in the insulin content in heat-treated groups when compared with the control group (fresh milk). In fact, the concentration of insulin in milk decreases by increasing the temperature of the heat treatment.

Conclusion: The pasteurization at a temperature of 63°C of camel milk could be the suitable alternative to preserve the anti-inflammatory activity, the antidiabetic properties and the insulin content of camel milk for a longer time.

Citation: Maha Hamouda, Effect of heat treatment on the alpha-amylase, 5-lipoxygenase activities and insulin content of camel milk. Endocrinol Metab Vol.6 No.S1.

Received: January 29, 2022; **Accepted:** February 08, 2022; **Published:** February 15, 2022

Biography

Maha Hamouda: PhD student at the University of Gabes, Tunisia. My thesis topic was 'investigation of the factors responsible for the antidiabetic effect of camel milk'.

References

1. Ansari, M. M., Jyotsana, B., Kumar, D., Sawal, R. K., Talluri, T. R., Chandra, V., & Sharma, G. T. (2020). [Effect of heat treatments on antioxidant properties and insulin content of camel milk.](#) Journal of Camel Practice and Research, 27(1), 105-110.
[\[Cross Ref\]](#) [\[Google Scholar\]](#) [\[Indexed at\]](#)

2. Ayyash, M., Al-Nuaimi, A. K., Al-Mahadin, S., & Liu, S. Q. (2018). [In vitro investigation of anticancer and ACE-inhibiting activity, \$\alpha\$ -amylase and \$\alpha\$ -glucosidase inhibition, and antioxidant activity of camel milk fermented with camel milk probiotic: A comparative study with fermented bovine milk](#). Food chemistry, 239,588-597. [[Cross Ref](#)] [[Google Scholar](#)] [[Indexed at](#)]

3. Khatoon, H., Ikram, R., Anser, H., Naeem, S., Khan, S. S., Fatima, S. & Sarfaraz, S. (2019). Investigation of anti-inflammatory and analgesic activities of camel milk in animal models. Pak J Pharm Sci,32,1879-83. [[Cross Ref](#)] [[Google Scholar](#)] [[Indexed at](#)]

4. Sboui, A., Khorchani, T., Djegham, M., Agrebi, A., Elhatmi, H., & Belhadj, O. (2010). [Anti-diabetic effect of camel milk in alloxan-induced diabetic dogs: a dose-response experiment](#). Journal of animal physiology and animal nutrition, 94(4), 540-546. [[Cross Ref](#)] [[Google Scholar](#)] [[Indexed at](#)]

5. Shori, A. B. (2015). [Camel milk as a potential therapy for controlling diabetes and its complications: A review of in vivo studies](#). Journal of food and drug analysis, 23(4), 609-618. [[Cross Ref](#)] [[Google Scholar](#)] [[Indexed at](#)]

