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Czech J. Food Sci.

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Schreiner, U.**

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Henle:

Studies on Enzymatic Crosslinking of Casein Micelles

Czech J. Food Sci., 27 (2009): S99-S101

The aim of our study was to gain insights into the reactions occurring in casein micelles during enzymatic modification with microbial transglutaminase (mTG). Therefore, UHT-treated milk was incubated with varying amounts of mTG and the caseins were analysed using different analytical methods. Regarding the casein species, it was observed that β -casein was crosslinked to a higher extent than the α -caseins. From this it can be suggested that β -casein is mainly located in the outer space of the micellar structure and therefore better accessible to mTG than α -caseins, which are located predominantly in the interior.

Furthermore, it was demonstrated by gel-permeation chromatography and RP-HPLC that the caseins are fixed within the micellar structure, by what the ratio of

extramicrocellular casein decreased. We conclude that an isopeptide network in the outer β -casein rich "shell" of the micelle is formed by mTG, which is responsible for the increased micellar stability.

Keywords:

microbial transglutaminase; casein micelle; crosslinking

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