**Heat induced gelation of casein micelles;**

**effects of adding minerals and whey or plant proteins**

Taco Nicolai

*Le Mans Université, IMMM UMR-CNRS 6283, Polymères, Colloïdes et Interfaces, 72085 Le Mans, cedex 9, France*

Casein micelles are charged colloidal particles that are stable when suspended in milk at pH 6.7 up to 100°C. When the pH is lowered the net charge density of micelles and therefore the electrostatic repulsion between the micelles reduces. This causes association of the micelles at room temperature below a critical pH of approximately 5.1, which can lead to gelation. However, it was found that association and gelation of micelles can be induced at higher pH by heating above a critical temperature (Tc)1,2. Tc decreases with decreasing pH and increasing micelle concentration. It also depends on the type and concentration of added salt.

Here I will present our recent investigations of heat-induced gelation of casein micelles in aqueous solution using rheology and confocal microscopy. The effects of adding CaCl2, NaCl and EDTA 3 on Tc and the elastic modulus will be discussed. Furthermore I will discuss the effects of adding whey, soy or pea proteins to the micelles suspensions3-6.

references

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