



STRUCTURAL ORGANIZATION OF CASEINS AND HIGH PRESSURE EFFECTS

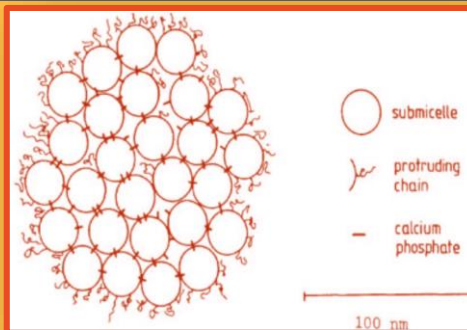
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MAIN OBJECTIVES

1. To expose and describe the various models proposed for the casein micelle.
2. Specify the effects of high pressure treatments on this structure.

BRIEF INTRODUCTION

Caseins association forming a colloidal system confers important properties to the milk. Hence, changes in the structure can affect that properties offering alternative ways to obtain innovative food products both texture and quality. In that point, the knowledge of the effects caused by pressure treatments would facilitate its implementation at the food industry.

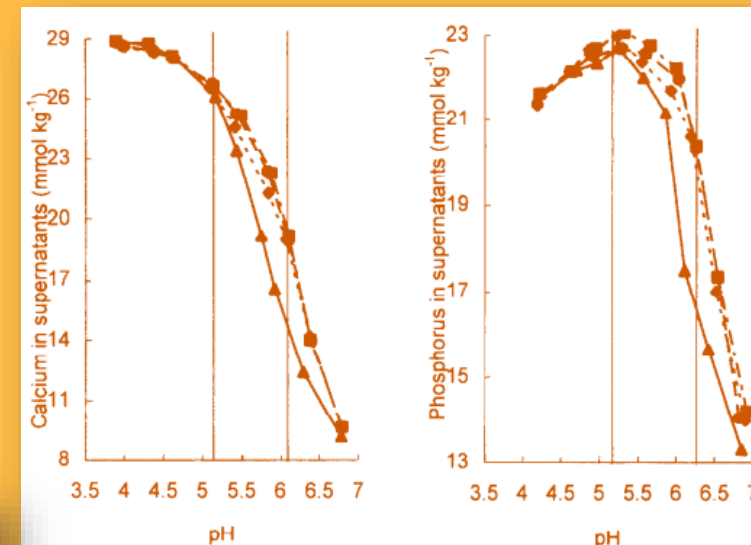
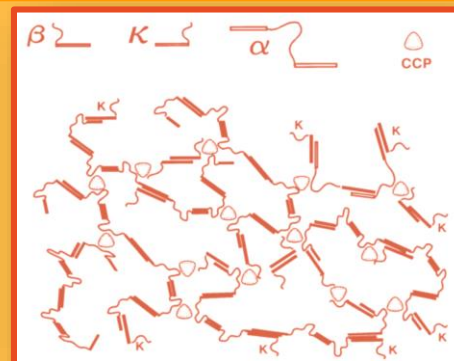


Subunit model (Walstra and Jenness 1984). CCP is the main reason for the submicelles' self-assembly

There's a hairy layer from the κ -casein which prevent the micelles from the precipitation.

Internal structure model (Horne 1998). **Hydrophobic and hydrophilic interactions aggregates caseins.**

CCP nanoclusters are observed.



Experimental data showing the presence of calcium and phosphate ions related with the pH-changes observed under pressurization. (Famelart *et al.*, 1997)

CONCLUSIONS

Models proposed for the explanation of the casein micelle give an extremely importance to the colloidal calcium phosphate and the hydrophobic and electrostatic interactions moulding the micelle. Therefore, this interactions seem to be the most affected by the application of high pressure treatments. The mechanisms for the disruption of the casein micelle are not well-known and it is reasonable because we are neither conscious of it's real structure.