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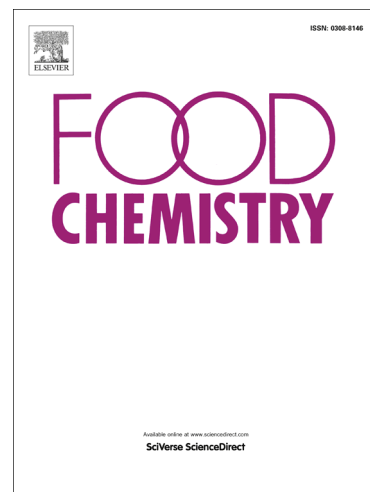
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Effect of high pressure – low temperature treatments on  
structural characteristics of whey proteins and micellar caseins

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## Abstract

In this study, structural changes in micellar caseins and whey proteins due to high pressure – low temperature treatments (HPLT) were investigated and compared to changes caused by high pressure treatments at room temperature. Whey protein isolate (WPI) solutions as well as micellar casein (MC) dispersions and mixtures were treated at 500 MPa (pH 7.0 and 5.8) at room temperature, -15 °C and -35 °C. Surface hydrophobicity and accessible thiol groups remained nearly unchanged after HPLT treatments whereas HP treatments at room temperature caused an unfolding of the WPI, resulting in an increase in surface hydrophobicity and exposure of the thiol groups. For HPLT treatments, distinct changes in the secondary structure (increase in the amount of  $\beta$ -sheets) were observed while the tertiary structure remained unchanged. Large flocs, stabilized by hydrophobic interactions and hydrogen bonds, were formed in casein containing samples due to HPLT treatments.

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