

Understanding the interactions between added milk proteins and other milk components during processing and the influence it has on dairy product quality (PROCOMP)

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Arla Foods Ingredients
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Aim and Description:

The project will apply a range of advanced techniques for characterization of interactions between whey protein ingredients and the other components in milk (casein micelles, fat globules) when processing into fermented milk products. A range of whey protein ingredients with variable properties in relation to particle size, hydration, content of native whey protein etc. will be available through Arla Foods Ingredients. These ingredients will be analysed in a range of milk model systems subjected to processing equivalent to what takes place in industry. The interactions between the applied ingredients and the casein and fat globules of the milk will be quantified using surface plasmon resonance, isothermal titration calorimetry and quartz crystal microbalance. Achieved results will then be related to a rheological, microstructural and sensory characterization of products made under similar processing conditions as the model systems.

Thus the project will elucidate how the reactivity of whey protein ingredients towards casein and fat globules relate to final product quality of fermented milks and hence create a knowledge base for development of the natural, dairy derived food ingredients of the future.