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Reduction of surface fat formation on spray-dried milk powders through emulsion stabilization with λ -carrageenan

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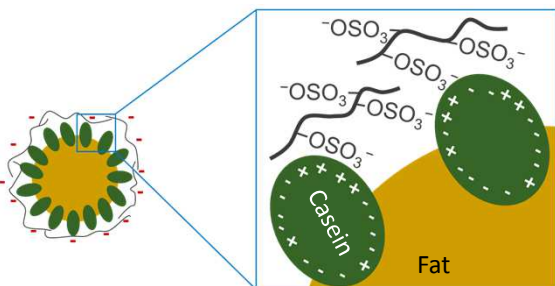
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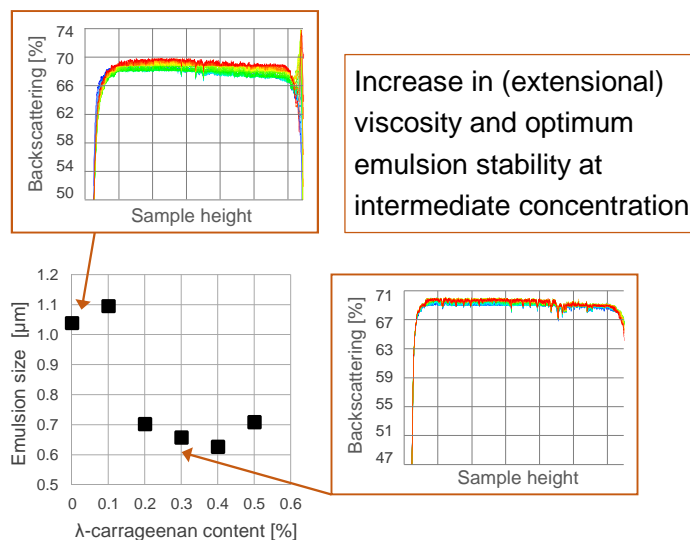
Formation of bilayer emulsions

- λ -carrageenan added to milk model emulsions at different concentrations
- The anionic polysaccharide can adsorb onto the fat globules' membranes
- Increase in negative charge of the globules, with the potential to stabilize the emulsions due to electrostatic repulsion



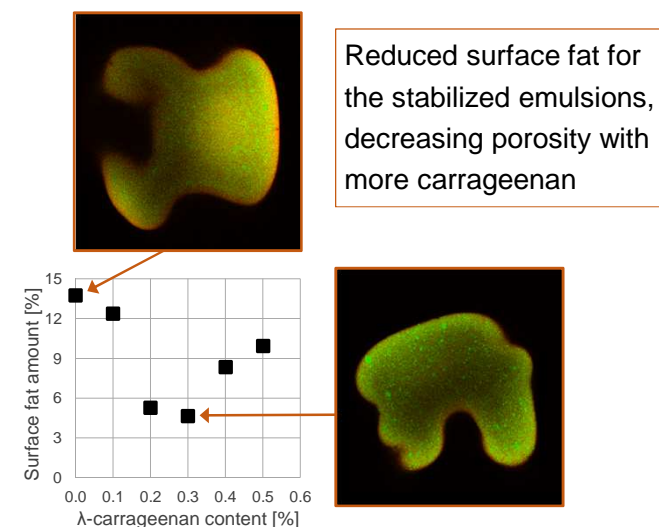
Emulsion analysis

- Emulsion stability
- Fat globule size
- Extensional and shear viscosity



Spray-dried powder analysis

- Fat encapsulation: CLSM, XPS, fat extraction
- Porosity and surface morphology: SEM
- Functional properties: Solubility, oxidative stability



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