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Identifying useful peptides derived from seaweed, potato and single cell protein with emulsifying properties

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This study is part of a bigger project which aims for identifying and producing useful peptides from available protein sources. Bioinformatics tools have been developed to predict functional peptides, which are embedded in potato, seaweed, and single cell proteins. Main focus was on identifying these peptides' emulsifying activity.

In order to characterise the emulsifying activity of these peptides, their interfacial tension was measured using a drop tensiometer. Moreover, physical stability of the 5% fish oil-in-water emulsions produced with peptides was followed during 6 days of storage. Droplet size, zeta potential and creaming of these emulsions were monitored during storage.

Four peptides from potato source, 12 peptides from seaweed source and 12 peptides from single cell source were analyzed. Results indicated that some of the peptides from different sources provided lower interfacial tension compared to sodium caseinate as a control. Moreover, some of the peptides from potato and seaweed sources showed better physical activity compared to emulsions produced with sodium caseinate. These results demonstrated that functional peptides from various sources can be good candidates for stabilizing oil-in-water emulsions due to their emulsifying properties.