Effect of pH-shift processing on in vitro digestibility and cell bioavailability of sea lettuce proteins

João Trigo, Niklas Engström, Sophie Steinhagen, Louise Juul, Hanna Harryson, Gunilla Toth, Henrik Pavia, Nathalie Scheers, Ingrid Undeland

1 Motivation

- Consumption of alternative protein sources is forecasted to grow by an annual rate of 9% until 2054! [1]
- Seaweed is a promising protein source, but natural protein extraction methods suffer from low yields due to extreme conditions

2 Hypothesis

- The pH-shift method is an example of a scalable and food-grade protein extraction method

3 Work overview

- pH-shift processing

4 Results

- Digestibility (DH%)
  - pH-Shift processing improved the digestibility of U. fenestrata proteins (p<0.05)
  - Crude S. latissima presented lower digestibility than crude U. fenestrata (p<0.05)

- Accessibility (%)
  - pH-shift protein extracts presented higher amino acid accessibility than crude U. fenestrata (p<0.05).

5 Conclusion

- The pH-shift method improved the digestibility and accessibility of seaweed proteins

References