



Fishing for food in marine by-products

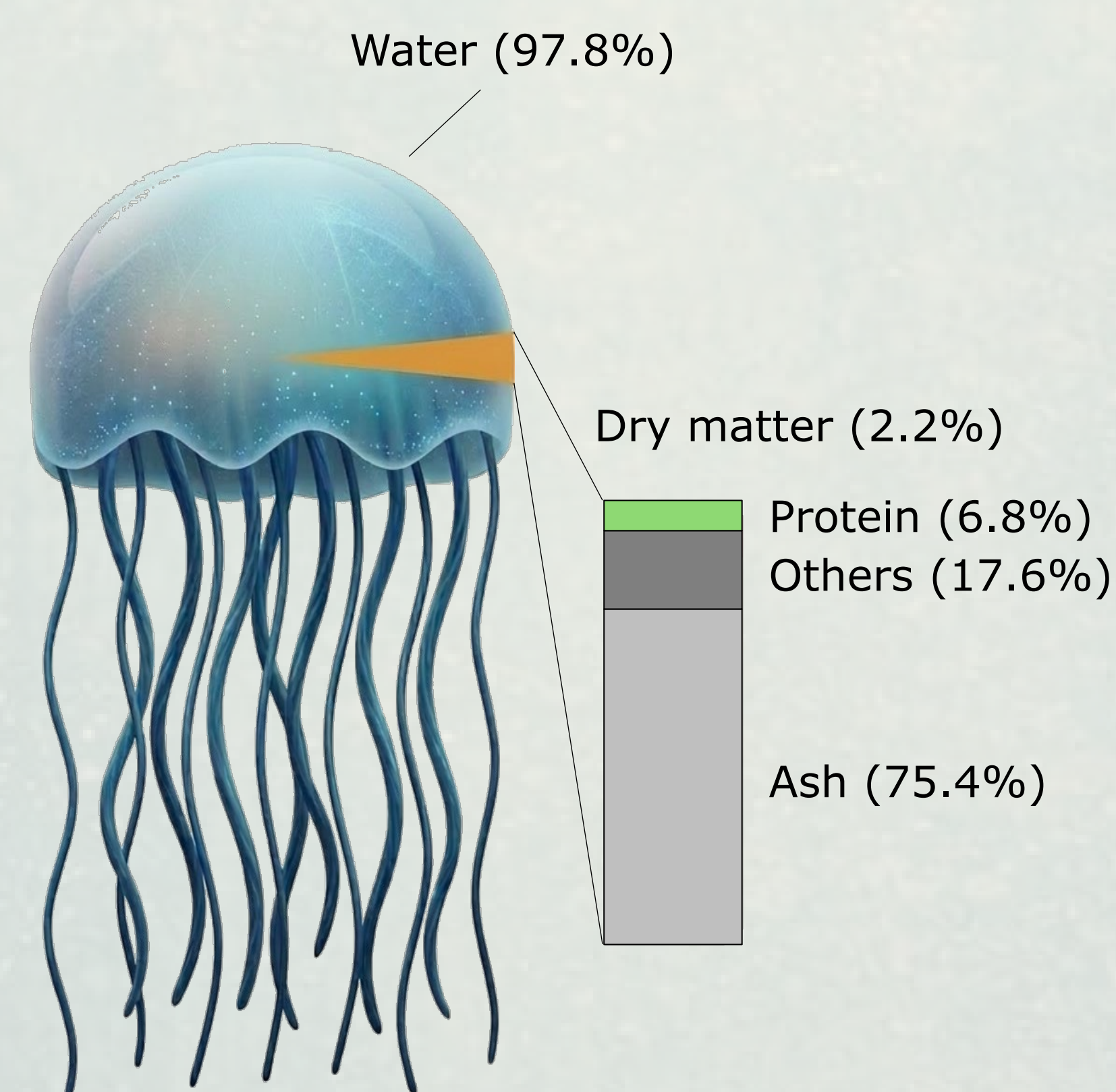
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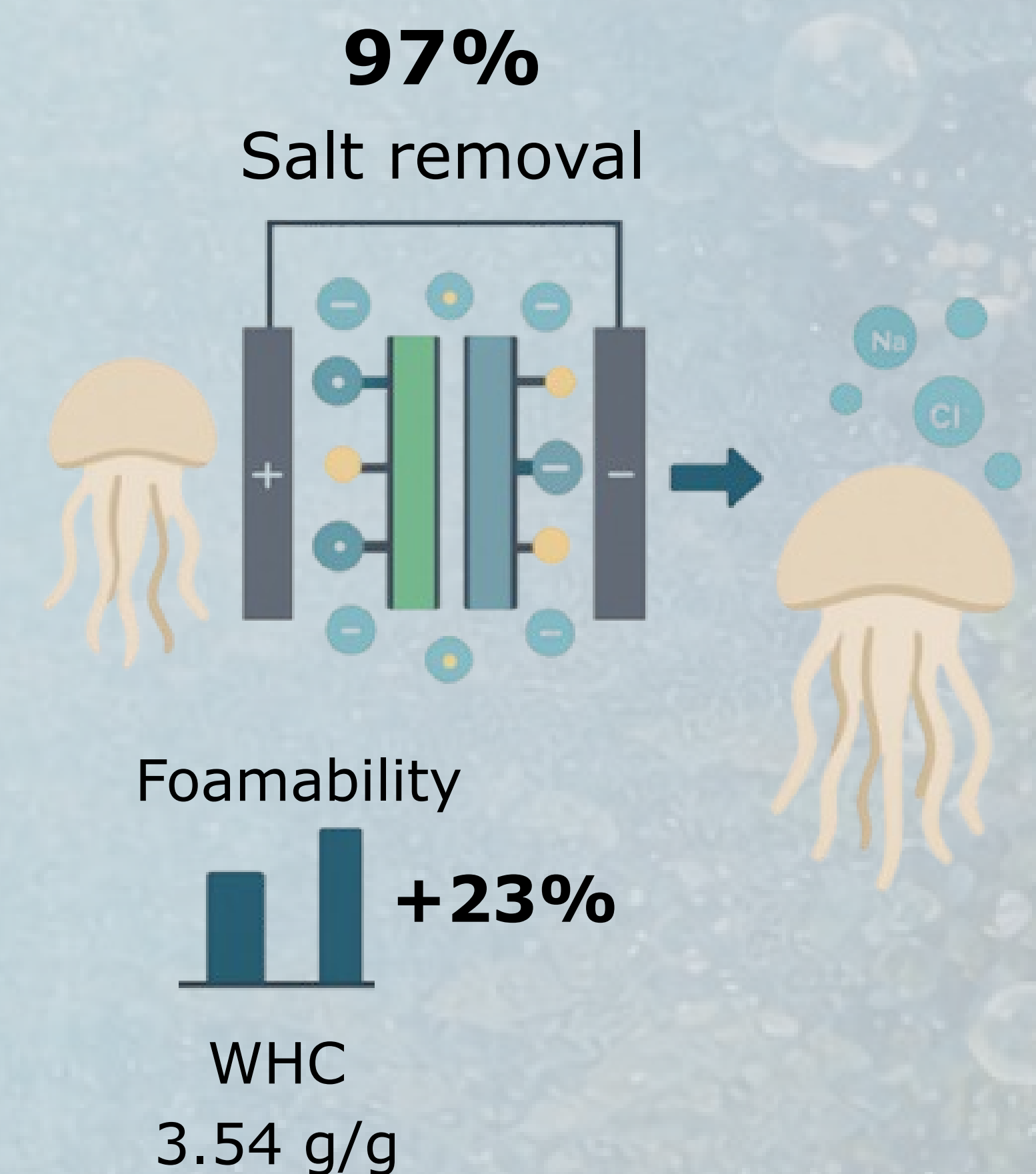
Background

- Marine side-streams and jellyfish represent underutilised resources rich in functional proteins
- Valorising these materials can reduce waste and support a circular marine bioeconomy
- Collagen and gelatine extracted from marine sources offer promising functionalities for food applications
- This project aims to **valorise marine side-streams and jellyfish into functional protein ingredients for sustainable food applications**

Jellyfish composition

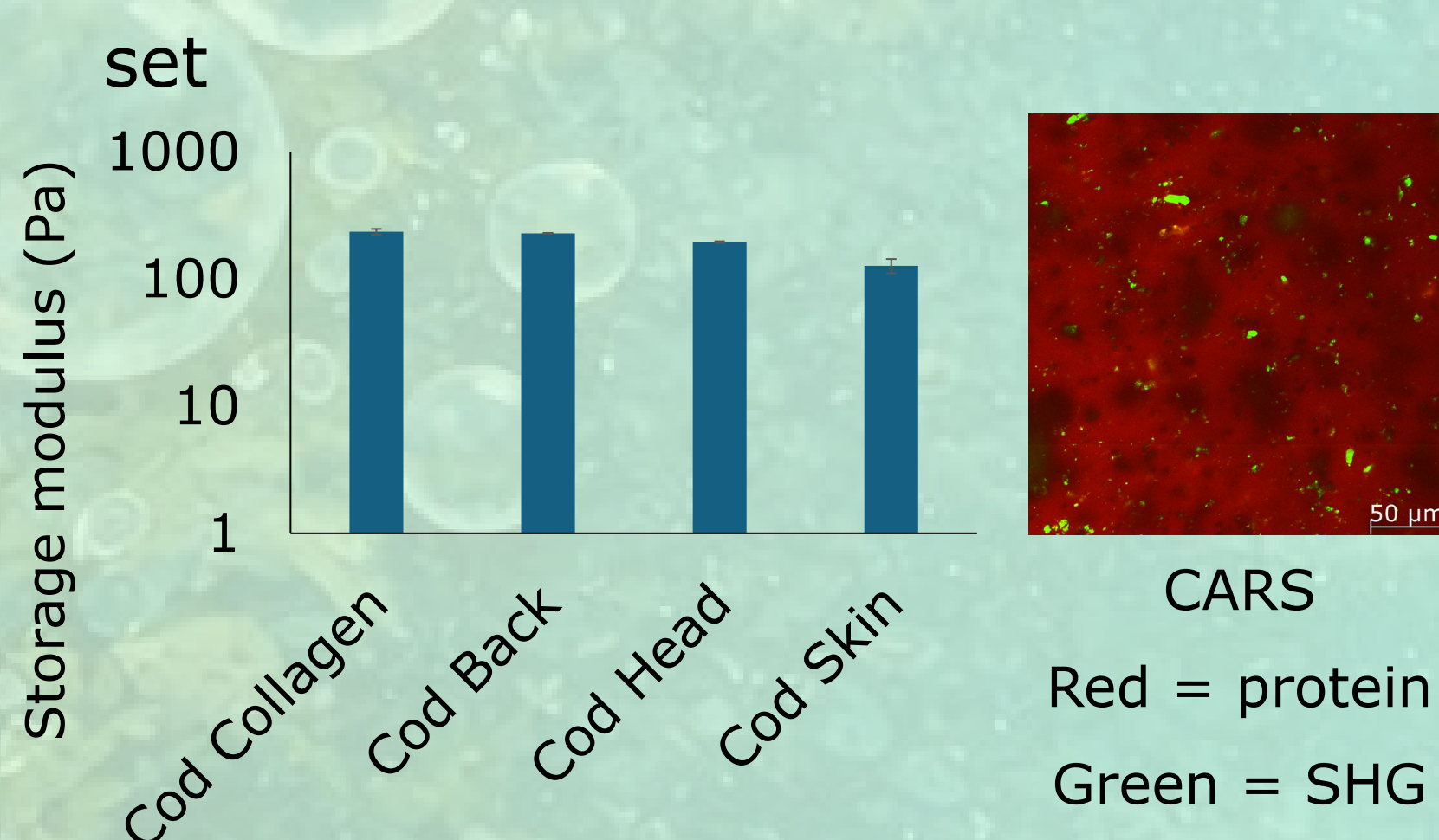


Electrodialysis of jellyfish



Collagen and gelatine extracts

- Extracts originate from the skin, headbones, and backbones from cod, haddock, seabream, and saithe
- Foamability: collagen > gelatine
- Protein gels (10%) take 24h to fully set



Spray drying of jellyfish

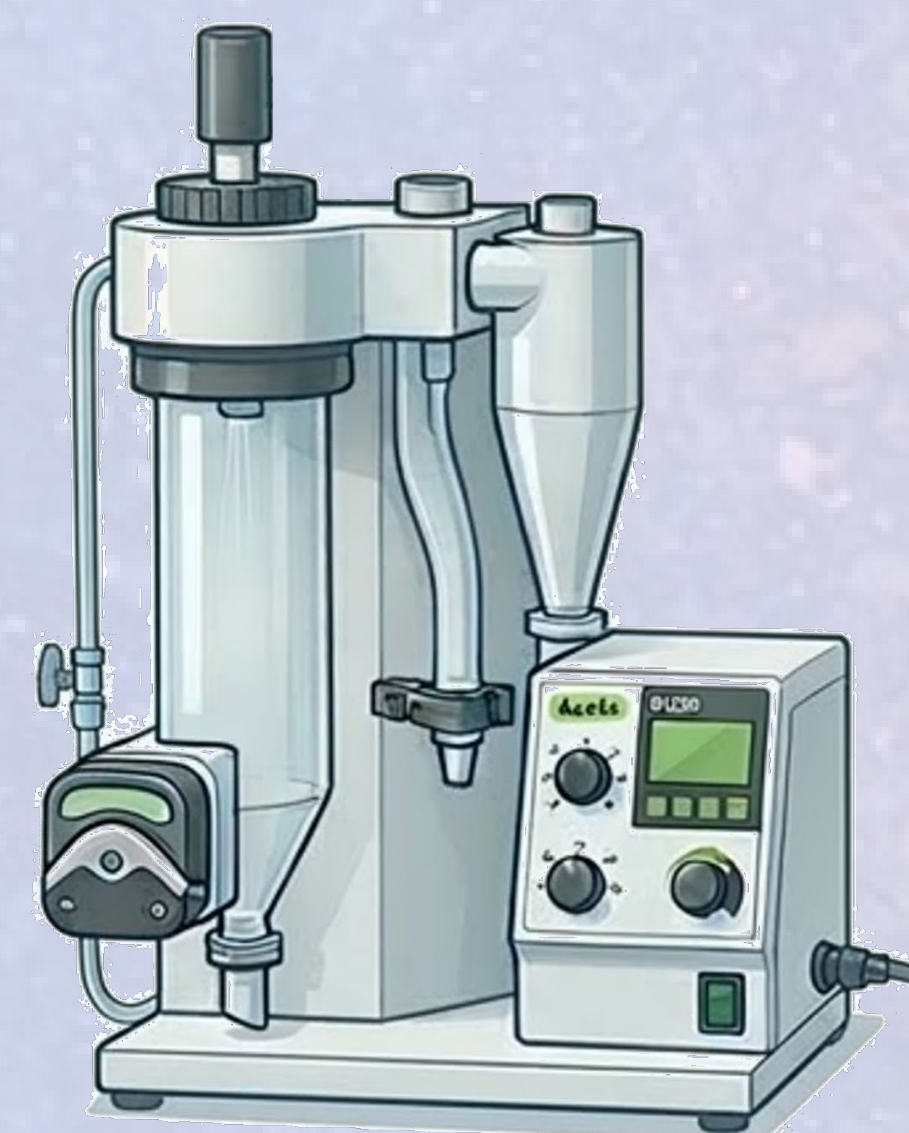
Input:
Jellyfish biomass

Moon jellyfish (*Aurelia aurita*) solution

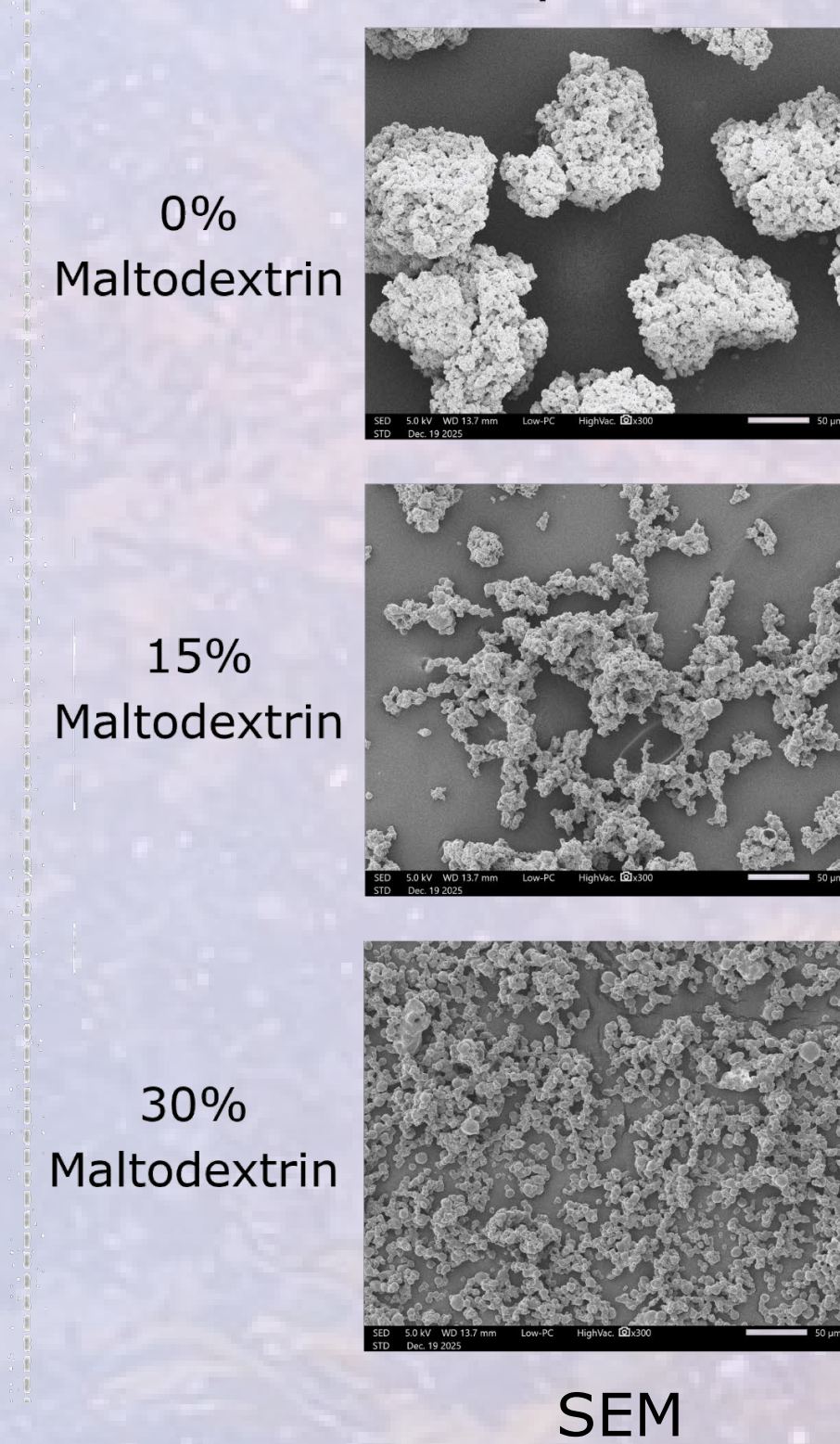


Maltodextrin Concentrations:
0%, 15%, 30% dm

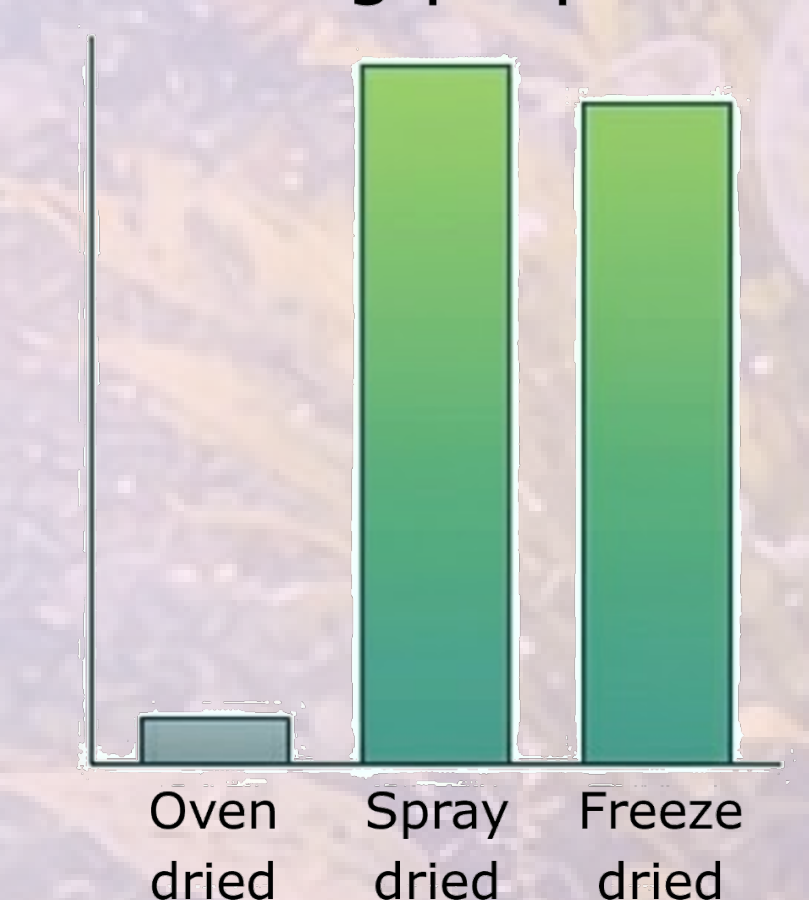
Process:
Spray drying



Output:
Functional powder



Foaming properties



Conclusions & Outlook

- ✓ Collagen and gelatine extracts from fish by-products can be used as functional ingredients
- ✓ Spray drying works as a drying method for jellyfish, if maltodextrin is added
 - ✓ Results may differ when a desalination method is performed before drying
- ✓ Electrodialysis is an effective desalination method for jellyfish with minimal energy loss

Acknowledgements

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