

Production of monomers and polyesters derived from seaweed

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Summary

Extracting high value products derived from seaweed to support a low carbon economy to contribute to the circular bioeconomy

Aims

- Establish an efficient and sustainable protocol to extract and hydrolyse alginates from two brown algae (Saccharina and Sargassum)
- Oxidise these acidic sugars into polyhydroxyl diacids and produce polyesters from the diacids obtained
- Develop a novel, biocatalysed method to produce alga-derived functional polymers

Outcomes

- Optimised the extraction and yield of alginates from *Saccharina latisima* and *Sargassum muticum*
- Demonstrated significantly improved extraction of alginates by using a combination of citric acid and sodium carbonate
- Evidenced that products of alginate hydrolysis can be enzymatically oxidised into potential monomers for polymerisation



“Optimising the extraction of alginates from seaweed can support low carbon economic activity that contribute to the bioeconomy”

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