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SEAMARK DELIVERABLE 6.2: SCALABLE BIOPROCESS FOR PRODUCTION OF BIOACTIVE ALGINATE OLIGOSACCHARIDES

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Summary:
The main objective of the SeaMark project is to demonstrate how to scale up innovative seaweed cultivation and processing into price-competitive product applications making the entire supply chain attractive for commercial investments. Industrial scalable production of bioactive (immunomodulating) alginate oligosaccharides was developed by Matis and Lund University from crude alginate extracts. Exo- and endo-active alginate lyases of different specificities were screened, and subsequently, the alginate lyases enzyme Alg3 was selected for potential industrialization as utilization of this enzyme resulted in oligosaccharide products with significant bioactivity. This was considered of fundamental market relevance. The products from the Alg3-conversion were also structurally analysed at University of Utrecht and found to contain a complex mixture of short oligosaccharides (di, tri and tetra saccharides) with varying content of guluronic (G) and mannuronic acid (M). The enzyme Alg3 had a high temperature stability and good production yield.

Public summary of confidential report

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