

MALDI-TOF MS ANALYSIS OF THE EXTRACELLULAR POLYSACCHARIDE RELEASED BY *THALASSIOSIRA PSEUDONANA* (BACILLARIOPHYTA)

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The extracellular polysaccharides (ECPS) released by diatoms have been proved to have significant roles in marine ecosystems and possess various potential applications. In this study, the matrix-assisted laser desorption/ionization time-of-flight mass spectrometry (MALDI-TOF MS) technology was used in the structural analysis of ECPS released by *Thalassiosira pseudonana* (Bacillariophyta). Three different de-protein methods, sevag method, trichloroacetic acid method (TCA) and enzymolysis method, were applied to purify ECPS and compared. The results suggested that TCA was the best de-protein method among three methods for MALDI-TOF MS investigation due to its high ECPS yield, protein removal ability and reliable MALDI-TOF MS fingerprint. The degree of polymerisation (d.p. profiles), the molecular weight of the ECPS and the distribution pattern of the polymers with different molecular mass were described respectively based on the MALDI-TOF MS spectra. The work represents the whole-level conformation of ECPS released by the diatom and has improved our knowledge about structural characterization of ECPS.

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