

论文

南极适冷菌 *Pseudoalteromonas* sp. S-15-13胞外多糖的分离、纯化和结构分析

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摘要:

从一株南极海冰中分离出来一种适冷菌 *Pseudoalteromonas* sp. S-15-13, 其胞外多糖具有良好的免疫活性. 为了探讨南极菌S-15-13胞外多糖结构与功能之间的相互关系, 对其胞外多糖进行了分离纯化和结构分析. 粗多糖经DEAE-Sephadex A-50离子交换层析及Sephadex G-100凝胶层析纯化后得到组分EPS- II, 经HPLC分析验证EPS- II为单一组分, 其分子量为62000; 单糖组成、甲基化分析及核磁共振结果表明, EPS- II的主体结构由(1,2) α -D-Man组成主链, 并在6位上有分支的新甘露聚糖.

关键词: 胞外多糖 南极适冷菌 *Pseudoalteromonas* sp. S-15-13 分离纯化

Separation, Purification and Structure Analysis of an Extracellular Polysaccharides from Antarctic Bacterium *Pseudoalteromonas* sp. S-15-13

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Abstract:

An immunoactive extracellular polysaccharide was isolated from *Pseudoalteromonas* sp. S-15-13, a bacterium screened from Antarctic sea-ice. In order to accurately define the structure of the Antarctic bacterial EPSs and to relate these findings to the function of these molecules in the natural environment, purification and structural analysis of S-15-13 EPSs was carried out. Exopolysaccharide fractions were extracted and were purified by DEAE-Sephadex A-50 ion-exchange and Sephadex G-100 gel chromatography to give EPS- II. The EPS- II was eluted as a single peak in HPLC analysis, indicating that the homogeneity and purity of EPS- II were suited to the structural analysis. The molecular weight of the EPS- II was determined as 62000 by the HPLC method. Sugar composition analysis, methylation analysis and one-dimensional and two-dimensional NMR spectroscopies reveal that the main structure of EPS- II was a 1,2 linking mannan with fewer 1,2,6-linking branch, a new extracellular polysaccharide from Antarctic bacterium.

Keywords: Extracellular polysaccharide Antarctic bacterium *Pseudoalteromonas* sp. S-15-13 Separation and purification

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