

研究论文

## 一种乳酸菌胞外多糖糖链结构解析

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**摘要** 以分离纯化得到的一种嗜热链球菌分泌的胞外多糖EPS03-1gm为研究对象, 采用气相色谱、分光光度及核磁共振技术对该多糖重复单位结构进行了解析。结果表明, EPS03-1gm的单糖组成是葡萄糖和半乳糖, 不含糖醛酸和蛋白成分, 其重复单位中有4个糖基单元且都是6C糖。DEPT谱说明每个重复单位中有4个CH<sub>2</sub>, 用二维核磁共振谱和HMQC及HMBC谱分别对4个糖单元中的H和C进行了归属。确定该多糖重复单位的糖链结构为:  $\rightarrow 3)-\alpha-D-Galp-(1\rightarrow 3)-\beta-D-Galf-(1\rightarrow 3)-\beta-D-Glcp-(1\rightarrow 6)-\beta-D-Glcp-(1\rightarrow$ 。

**关键词** [胞外多糖](#) [核磁共振](#) [结构解析](#)

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## Glycol-unit Structure Identification of a Kind of Exopolysaccharide from a Lactic Acid Bacterium

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**Abstract** The structure of exopolysaccharide EPS03-1gm was identified by the technology of GC, UV spectrophotometric analysis and NMR. The EPS03-1gm was separated and purified before analysis which was secreted from *S. thermophilus*. The results show that the mono-glycoses of EPS03-1gm were glucose and galactose and there are no glycol-aldehydic acid or protein in the ingredient. The <sup>1</sup>H NMR made it clear that there were four glycol-cells in each repeat glycol-unit. The DEPT reveals there were four CH<sub>2</sub> in every repeat glycol-unit. The positions of H were confirmed by analyzing the TOCSY spectrum. The positions of H and the order of glycol-cell were confirmed by analyzing the HMQC and HMBC spectra. Finally, the glycol-unit structure was fixed on as follows:  $\rightarrow 3)-\alpha-D-Galp-(1\rightarrow 3)-\beta-D-Galf-(1\rightarrow 3)-\beta-D-Glcp-(1\rightarrow 6)-\beta-D-Glcp-(1\rightarrow$ 。

**Key words** [Exopolysaccharides of lactic acid bacteria](#) [NMR](#) [Structure identification](#)

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