



松木层孔菌(*Phellinus pini*)胞外多糖结构解析

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摘要 目的 研究松木层孔菌胞外多糖(PPE)的结构性质。方法 采用高效液相色谱法鉴定纯度并测定相对分子质量;气相色谱、红外光谱、完全酸水解、高碘酸氧化及Smith降解、甲基化反应及其产物的GC-MS联机分析、¹³C-核磁共振对松木层孔菌胞外多糖进行结构性质研究。结果 松木层孔菌胞外多糖为均一组分,多糖含量为92.84%,相对分子质量为 3.9×10^4 ,由甘露糖、葡萄糖、半乳糖组成,其摩尔比为38.4:1.76:1,由 α 型糖苷键构成,主链部分由 α -(1 \rightarrow 2)-Man构成,在O-6处形成分支点,支链部分由 α -(1 \rightarrow 3)-Man和 α -(1 \rightarrow 6)-Man构成,Man构成松木层孔菌胞外多糖的末端。结论 首次对松木层孔菌胞外多糖的化学结构进行深入的研究。

关键词: 松木层孔菌 多糖 结构分析

Abstract: OBJECTIVE To characterize the structure of extracellular polysaccharide of *Phellinus pini*. METHODS The purity and molecular weight of polysaccharide were determined by HPLC, GC, IR, complete acid hydrolysis, periodate oxidation, Smith degradation, methylation analysis and ¹³C-NMR were applied to determine the structural features. RESULTS Extracellular polysaccharide of *Phellinus pini* (PPE) had uniform component, and the content of polysaccharide was 92.84%. The molecular weight was 3.9×10^4 . PPE was composed of Man, Glc and Gal with the molar ratio of 38.4:1.76:1. The backbone of PPE was composed of α -(1 \rightarrow 2)-Man. The branches were located at O-6 of α -(1 \rightarrow 2)-Man. The branched chain was consisted of α -(1 \rightarrow 3)-Man and α -(1 \rightarrow 6)-Man. The terminal sugar was Man. CONCLUSION This is the first in-depth study on the characterization of extracellular polysaccharide of *Phellinus pini*.

Keywords: *Phellinus pini*, polysaccharide, structure analysis

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