

分离工程

应用微波前处理-热水浸提技术提取龙眼多糖

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摘要

龙眼多糖具有抗氧化、抗衰老等多种生物活性, 但对龙眼多糖提取工艺和其化学结构方面的研究文献报道较少。采用微波前处理-热水浸提新工艺提取龙眼多糖, 单因素考察及正交实验结果表明, 在所考察实验范围内, 龙眼多糖的最佳提取工艺条件为: 微波前处理功率700 W, 处理时间60 s, 热水浸提料液比1:15, 浸提温度100℃, 浸提时间7 h, 搅拌速率240 r·min⁻¹。在此条件下, 龙眼多糖收率可达9.00 mg·(g龙眼)⁻¹(干重)。紫外和红外光谱分析结果显示, 所获得的龙眼多糖是具乙酰氨基结构的β型吡喃酸性杂多糖。

关键词

[龙眼](#) [多糖](#) [微波](#) [提取](#)

分类号

Hot water extraction of longan polysaccharide assisted by microwave pretreatment

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Abstract

Longan polysaccharide (LPS) has been discovered to have high anti-oxidation and anti-senility activity, while only a few studies about its extraction and chemical structure analysis have been reported. In this paper, longan pulp was pretreated by microwave and then LPS was extracted with hot water. The results of single-factor examination and orthogonal experiments showed that the optimal process parameters for this method were: microwave pretreatment with power 700 W for 60 s, followed by hot water extraction with solid(g)-liquid (ml) ratio of 1:15 at 100℃ for 7 h with stirring speed of 240 r·min⁻¹.

The optimal yield of 9.00 mg·g⁻¹(dried longan biomass weight) was achieved under these parameters. Ultraviolet spectrum and FTIR analysis showed that LPS was a β type acidic heterosaccharide with pyran and acetyl amino group.

Key words

[longan](#) [polysaccharide](#) [microwave](#) [extraction](#)

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