

论文

水溶性海星皂苷的分离纯化及其抗真菌活性研究

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摘要:

为了分离纯化出具有强抗真菌活性的水溶性海星皂苷,以罗氏海盘车(*Asterias rollestoni*)腕为实验材料,利用水抽提方法获得水溶性海星皂苷粗品,依次利用大孔树脂和硅胶柱层析对水溶性海星皂苷进行了纯化,并对其抗真菌活性进行了测定。研究发现,在30%、50%、70%、80%、95%乙醇溶液的大孔树脂柱层析洗脱组分中,70%乙醇溶液洗脱组分对白色念珠菌和裂殖酵母菌的抗真菌活性最强。70%乙醇溶液洗脱组分经硅胶柱层析进一步纯化后,得到了SF-1、SF-2、SF-3和SF-4四种纯化样品,其中SF-1纯化样品没有抗真菌活性,SF-2纯化样品具有极弱的抗真菌活性,SF-3和SF-4纯化样品均具有很强的抗真菌活性。SF-3纯化样品在高压液相柱层析(HPLC)图谱中仅显示单一洗脱峰,表明其纯度很高,可应用于高效抗真菌药物的研制。研究结果为利用水溶性海星皂苷研制高效抗真菌药物奠定了基础。

关键词: 水溶性海星皂苷 抗真菌活性 大孔树脂柱层析 硅胶柱薄层层析

Purification and antifungal activity examination of water-soluble starfish glycosides from *Asterias rollestoni*

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Abstract:

To exploit highly bioactive natural antifungal medicaments from starfish, water-soluble starfish glycosides from *Asterias rollestoni* were isolated and purified by macroporous resin column and silica gel column chromatography, and their antifungal bioactivities were also examined. Among the macroporous resin fractions of 30%, 50%, 70%, 80% and 95% ethanol, 70% ethanol eluted fractions showed the highest antifungal activity towards *Schizosaccharomyces pombe* and *Candida albicans*. After being checked by thin layer chromatography, purified SF-1, SF-2, SF-3 and SF-4 fractions were obtained from 70% ethanol eluted fractions with a silica gel column. Among the purified fractions, SF-3 and SF-4 showed much higher antifungal activities, while SF-1 did not show any antifungal activities and SF-2 had only very lower antifungal activities. SF-3 exhibited a single peak after loaded onto a high pressure liquid chromatography (HPLC) column, which indicated that SF-3 was pure enough to be used as a candidate of antifungal medicament development. This research will lay a solid foundation for the development and application of natural and highly bioactive antifungal medicaments.

Keywords: *Asterias rollestoni* water-soluble starfish glycosides antifungal activities macroporous resin column silica gel column

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