

论文

水溶性海参皂苷的分离纯化及其抗真菌活性研究

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摘要:

从冻干仿刺参加工废弃液中分离纯化出水溶性海参皂苷, 筛选并纯化出其强抗真菌活性组分, 为利用水溶性海参皂苷研制高效抗真菌药物创造条件. 先后利用大孔树脂柱层析和硅胶柱层析对水溶性海参皂苷进行了纯化, 并对各种纯化组分的抗真菌活性进行了测定. 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裂殖酵母菌和白色念珠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SC-1、SC-2、SC-3和SC-4四种纯化样品, 除SC-1无抗真菌活性外, 其它3种纯化样品对裂殖酵母菌和白色念珠菌均具有显著的抗真菌活性, 且组分SC-2和SC-3的抗真菌活性高于SC-4. SC-2纯化样品在高压液相柱层析(HPLC)图谱中仅显示为单一洗脱峰, 且在旋转蒸发后可形成结晶, 表明其纯度极高, 可用于高效抗真菌药物的研制.

关键词: 水溶性海参皂苷 抗真菌活性 大孔树脂柱层析 硅胶柱层析 高压液相柱层析

Purification and antifungal activity examination of water-soluble holothurian glycosides from *Apostichopus japonicus*

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Abstract:

To exploit the highly effective natural antifungal medicaments from sea cucumbers, water-soluble holothurian glycosides from *Apostichopus japonicus* were isolated and purified, and their antifungal activities were examined. The water-soluble holothurian glycosides were purified by macroporous resin and silica gel column chromatography, and the antifungal activities of different glycoside fractions were investigated. Among the macroporous resin fractions of 30%, 50%, 70%, 80% and 95% ethanol, the 70% ethanol fraction showed the highest antifungal activity towards *Schizosaccharomyces pombe* and *Candida albicans*. After the 70% ethanol fraction was loaded onto a silica gel column, fractions were collected and checked by thin layer chromatography. The fractions with the same mobility and in the same band were collected and pooled together as purified glycosides which were designated as SC-1, SC-2, SC-3 and SC-4. Among the purified glycosides, SC-2, SC-3 and SC-4 show high antifungal activities, but SC-1 does not. Furthermore, the antifungal activity of SC-2 or SC-3 was higher than that of SC-4. SC-2 exhibited a single peak after loading onto a high pressure liquid chromatography (HPLC) column, which indicated that SC-2 was pure enough to be used as a candidate for antifungal medicaments.

Keywords: water-soluble holothurian glycosides antifungal activities macroporous resin column chromatography silica gel column chromatography high pressure liquid chromatography

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