

## 羊栖菜中岩藻甾醇、马尾藻甾醇以及水溶性多糖的综合提取工艺

### Comprehensive technology for extracting fucosterol, saringosterol and polyccharides from Sargassum fusiforme

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英文关键词: Sargassum fusiforme; fucosterol; saringosterol; polysaccharides; extraction

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中文摘要:

以羊栖菜为原料从中依次提取岩藻甾醇, 马尾藻甾醇及羊栖菜水溶性多糖, 实现羊栖菜中甾醇和多糖的综合利用。采用硅胶柱层析、萃取以及重结晶等技术对上述成分进行分离纯化, 借助元素分析、质谱、核磁共振以及红外光谱进行分析鉴定。并对羊栖菜水溶性多糖的几种脱蛋白、脱色方法进行比较。通过正交试验对提取工艺进行优化。结果显示: 在影响岩藻甾醇提取率的4个因素(时间、温度、料液比和乙醇浓度)中, 料液比对提取率的影响最为显著, 其次为乙醇浓度。提取岩藻甾醇最佳工艺为: 时间4 h, 温度60℃, 90%乙醇浓度, 料液比1:20。羊栖菜多糖去蛋白方法以酶解与Sevag法结合效果较好; 羊栖菜多糖脱色方法各方面综合考虑, 大孔树脂较好。

英文摘要:

Fucosterol, saringosterol and polyccharides were extracted from Sargassum fusiforme. Silica chromatography, extraction and recrystallization were conducted for separation and purification. Element analysis, Mass spectrometry (MS), nuclear magnetic Resonance (NMR) and Infra red (IR) were conducted for further analysis of fucosterol and saringosterol. Several de-protein and decoloring methods of the polysaccharides were also compared to determine the most effective extraction procedure of Sargassum fusiforme polysaccharides. Extraction conditions of fucosterol were optimized by orthorhombic analysis. Among the four extraction factors concerned, including extraction time, temperature, ratio of sample weight to solvent volume, and concentration of alcohol, ratio of sample weight to solvent volume was the most significant factor that affected the extraction rate, followed by the concentration of alcohol. The optimized extraction condition of fucosterol from Sargassum fusiforme was to extract at 60℃ for 4 h, with 90% alcohol and a 1:20 sample weight/solvent volume ratio. In de-protein methods, effect of enzyme and Sevag is pretty good. In de-decoloring methods, effect of macroreticular resin is pretty good.

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