



鱼腥草抗补体活性多糖的制备工艺研究

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中文摘要:目的: 建立鱼腥草中抗补体活性多糖的整套制备工艺。方法: 以多糖得率和经典抗补体活性为综合指标, 利用正交试验确定鱼腥草活性多糖的最佳提取工艺和最佳醇沉条件, 以蛋白清除率和多糖保留率为综合指标, 进行三氯乙酸法除蛋白工艺优化, 以色素去除率和多糖损失率为综合指标, 利用正交试验优化最佳脱色工艺。结果: 最佳制备工艺为于50倍水、90℃下煎煮3次, 每次2 h, 将提取液浓缩至相当于每毫升0.12 g生药, 加入4倍体积的90%乙醇, 静置24 h, 离心去上清液, 沉淀依次用无水乙醇、丙醇、无水乙醇洗涤, 再用水复溶, 反复溶液中加入三氯乙酸至终浓度为20%除蛋白, 于50℃, pH 3.0, 3%活性炭下吸附50 min脱色。采用该工艺制备三批鱼腥草抗补体活性多糖, 多糖得率平均为4.03% (RSD 0.96%), 糖质量分数平均为80.97% (RSD 1.5%), 蛋白质量分数平均为2.02% (RSD 2.3%), 补体抑制活性的 CH_{50} 平均为0.079 g · L⁻¹ (RSD 3.6%)。结论: 本实验系统建立的工艺稳定可靠, 所得多糖的糖含量高、活性强, 适合鱼腥草抗补体活性多糖的大量制备。

中文关键词: 鱼腥草 多糖 抗补体 提取 醇沉 除蛋白 脱色

Preparation procedures of anti-complementary polysaccharides from *Houttuynia cordata*

Abstract: Objective: To establish and optimize the preparation procedures of the anti-complementary polysaccharides from *Houttuynia cordata*. **Method:** Based on the yield and anti-complementary activity *in vitro*, the conditions of extraction and alcohol precipitating process were optimized by orthogonal tests. The optimal condition of deproteinization was determined according to the results of protein removed and polysaccharide maintained. The best decoloring method was also optimized by orthogonal experimental design. **Result:** The optimized preparation procedures were given as follows: extract the coarse powder 3 times with 50 times volume of water at 90℃ for 2 hours every time, combine the extracts and concentrate appropriately, equivalent to 0.12 g of *H. cordata* per milliliter. Add 4 times volume of 90% ethanol to the extract, allow to stand for 24 hours to precipitate totally, filter and the precipitate was successfully washed with anhydrous alcohol, acetone and anhydrous ether. Resolve the residue with water, add trichloroacetic acid (TCA) to a concentration of 20% to remove protein. Decoloration was at a concentration of 3% with activated carbon at pH 3.0, 50℃ for 50 min. The above procedures above were tested 3 times, resulting in the average yield of polysaccharides at 4.03% (RSD 0.96%), the average concentrations of polysaccharides and protein at 80.97% (RSD 1.5%) and 2.02% (RSD 2.3%), and average CH_{50} at 0.079 g · L⁻¹ (RSD 3.6%). **Conclusion:** The established and optimized procedures are repeatable and reliable to prepare the anti-complementary polysaccharides with high quality and activity from *H. cordata*.

keywords: *Houttuynia cordata* polysaccharide anti-complementary extraction ethanol precipitation deproteinization decoloration

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