

多指标综合评分法研究姜黄色素的提取工艺

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摘要: 以得率和抗氧化活性为考察指标,在正交试验的基础上,采用多指标综合评分法研究了温度、乙醇体积分数、提取时间和料液比对姜黄色素的得率,二苯基苦基苯肼自由基(DPPH·)清除率和羟基自由基(\cdot OH)清除率的影响。综合评分法得到的姜黄色素优化提取工艺为:提取温度 80 $^{\circ}$ C,乙醇体积分数 90%,提取时间 1.5 h,料液比为 1:8,该工艺条件下姜黄色素的得率为 4.37%,DPPH·清除率为 8.58%, \cdot OH清除率为 20.87%。

关键词: 多指标综合评分法;姜黄色素;提取;DPPH 自由基;羟基自由基

Study on Extraction of Curcuminoids by Multi-indexes Comprehensive Evaluation Method

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Abstract: There are many antioxidants in curcuminoids, such as curcumin, demethoxycurcumin and bisdemethoxycurcumin. Based on orthogonal experiments, the effects of extraction temperature, volume fraction of ethanol, extraction time and solid-liquid ratio on yield of curcuminoids, scavenging rates of DPPH· and \cdot OH have been investigated by multi-indexes comprehensive method. The optimum conditions are as follows: extraction temperature 80 $^{\circ}$ C, volume fraction of ethanol 90%, extraction time 1.5 h and solid-liquid ratio 1:8. Under the conditions, the yield of curcuminoids is 4.37%, and the scavenging rates of DPPH· and \cdot OH are 8.58% and 20.87%, respectively.

Key words: multi-indexes comprehensive evaluation method; curcumin; extraction; DPPH free radical; hydroxyl free radical

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