研究论文

中药材提取物的混批勾兑研究

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摘要　采用非线性最小二乘拟合计算中药材提取物的勾兑系数，不同批的中药材提取物经过勾兑后与参照样品的差异减小，各成分含量稳定。采用数据预处理的方法，并对数据预处理方法进行改进，使峰面积较小的色谱峰可以实现较小的相对差异。引入误差控制系数，可实现对特定色谱峰的控制要求。实验结果表明，非线性最小二乘拟合可以用于计算中药材提取物的勾兑系数。

关键词　中药材　勾兑　非线性最小二乘拟合　预处理　误差控制系数

分类号

Study of Blending Method for the Extracts of Herbal Plants

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Abstract

The irregularity in herbal plant composition is influenced by multiple factors. As for quality control of traditional Chinese medicine, the most critical challenge is to ensure the dosage content uniformity. This content uniformity can be improved by blending different batches of the extracts of herbal plants. Nonlinear least-squares regression was used to calculate the blending coefficient, which means no great absolute differences allowed for all ingredients. For traditional Chinese medicines, even relatively smaller differences could present to be very important for all the ingredients. The auto-scaling pretreatment was used prior to the calculation of the blending coefficients. The pretreatment buffered the characteristics of individual data for the ingredients in different batches, so an improved auto-scaling pretreatment method was proposed. With the improved auto-scaling pretreatment, the relative differences decreased after blending different batches of extracts of herbal plants according to the reference samples. And the content uniformity control of the specific ingredients could be achieved by the error control coefficient. In the studies for the extracts of fructus gardeniae, the relative differences of all the ingredients is less than 3% after blending different batches of the extracts. The results showed that nonlinear least-squares regression can be used to calculate the blending coefficient of the herbal plant extracts.

Key words　herbal plants　blending　nonlinear least-squares regression　pretreatment　error control coefficient

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