

论文

优化指标gHCRF在HPLC分离氯苄律定有关物质中的应用

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摘要:

目的:在多因素串联色谱响应函数(HCRF)基础上提出了新的优化指标gHCRF,对新化合物氯苄律定有关物质的HPLC分离进行优化。方法:采用球面对称设计,对影响色谱分离的两个主要因素(x<sub>1</sub>:甲醇比例;x<sub>2</sub>:离子对试剂浓度)进行优化,并对试验结果进行关系式模拟。结果:以gHCRF建立的关系式预测的理论最优解为x<sub>1</sub>=76%,x<sub>2</sub>=0.01 mol·L<sup>-1</sup>,与实验最优解x<sub>1</sub>=75%,x<sub>2</sub>=0.01 mol·L<sup>-1</sup>十分接近,预测能力可信。结论:氯苄律定有关物质的分离证实gHCRF适用于复杂混合样品的分离优化。

关键词: 氯苄律定 色谱优化 广义的多因素串联色谱响应函数(gHCRF) 球面对称设计

APPLICATION OF OPTIMIZATION PARAMETER gHCRF IN THE HPLC SEPARATION OF CHROLOBENZYLI DINE AND ITS RELATED COMPOUNDS

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Abstract:

AIM: The generalized HCRF (gHCRF) was proposed as a new optimization parameter based on heterogeneous chromatographic response function(HCRF), and was first used in the HPLC separation of chrolobenzylidene and its related compounds. METHODS: By use of Spherical Symmetric Design, optimization was made on the two factors (x<sub>1</sub>: methanol concentration;x<sub>2</sub>: perchloric acid concentration) which affected the chromatographic separation. The equations simulating the relationship between response values and factors were setup. RESULTS: The theoretical optimal condition from gHCRF equation is x<sub>1</sub>=76% andx<sub>2</sub>=0.01 mol·L<sup>-1</sup>, which is very much close to the experimental optimal condition (x<sub>1</sub>=75% andx<sub>2</sub>=0.01mol·L<sup>-1</sup>). Therefore, the prediction from the equation is reasonable. CONCLUSION: The separation of chrolobenzylidene and its related compounds showed that the gHCRF parameter can be satisfactorily applied to the chromatographic optimization of complex samples.

Keywords: chromatographic optimization generalized heterogeneous chromatographic response function(gHCRF) spherical symmetric design chrolobenzylidene

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