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研究论文

大豆异黄酮指纹图谱中保留时间漂移的校正研究

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摘要 选取5个极性不同的化合物作为标准样品,在不同仪器及不同色谱柱上采用已建立的大豆异黄酮高效液相色谱(HPLC)指纹图谱条件进行测定,以它们在不同色谱仪(或柱)上的保留时间进行线性回归,并用得到的线性方程对相同条件下测得的大豆异黄酮指纹谱中峰面积为总峰面积1.5%以上的色谱峰的保留时间进行校正,通过校正使保留时间的最大绝对误差由5.868 min减小为0.854 min。采用该方法可以校正相同色谱条件但不同实验室间指纹图谱保留时间的漂移,提高HPLC指纹图谱的重现性。

关键词 色谱指纹图谱 指纹图谱重现性 保留时间漂移 大豆异黄酮

分类号

Study on Retention Time Shift Correction of Fingerprint Chromatograms of Soybean Isoflavones

Abstract

A method has been developed to improve the reproducibility of retention time on the fingerprint chromatograms of soybean isoflavones by high performance liquid chromatography (HPLC). Alltech C18 column and Diamonsil C18 column were used on LC-10AT system and Aglient 1100 system respectively, the mobile phase being acetic acid solution (pH 3.2)-methanol, flow rate being 0.6 mL/min, detection wavelength at 261 nm. All experiments were performed at room temperature. Under the chromatographic conditions of soybean isoflavone fingerprints, five substances as standards were used to establish the calibration curves. The shift of retention time of the fingerprint chromatogram in which peak area percentage is more than 1.5% was corrected by linear equation. The results show that the absolute error of retention times is diminished from 5.868 min to 0.854 min after calibration. This method is a good way to correct the shift of retention time for chromatographic fingerprints obtained from different C18 columns or different HPLC systems. In addition, the calibration results improve the reproducibility greatly and can be applied in different laboratories conveniently.

Key words chromatographic fingerprint reproducibility of fingerprint shift of retention time soybean isoflavone

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