色谱 2007 25 (1): 96-100 ISSN: 1000-8713 CN: 42-1226/O

研究论文

金银花的毛细管电泳指纹图谱研究

孙国祥,杨宏涛,邓湘昱,孙毓庆

沈阳药科大学药学院, 辽宁 沈阳 110016

收稿日期 2006-2-24 修回日期 2006-9-20 网络版发布日期 2007-2-9 接受日期

摘要 采用毛细管区带电泳法,以50 mmol/L硼砂(含20 mmol/L β-环糊精(CD),用磷酸调pH 8.0)为背景电解质,运行电压12 kV,紫外检测波长254 nm,重力进样15 s(高度8.5 cm),建立了金银花药材水提取液的毛细管电泳指纹图谱(CEFP)。将13个不同产地的金银花药材供试液的CEFP进行比较,以电泳峰出现率100%计,确定金银花的共有指纹峰为18个。该CEFP具有较好的精密度和重现性,分离效能高且成本低廉。提出了指纹图谱宏观含量相似度R、投影含量相似度C和定量相似度P的概念,可从总体上评价药材化学组分的整体含量情况。从两个方面评价各产地药材与对照CEFP间的总体相似性,合格药材应具备以下两个条件:(1)代表化学成分分布相似性的定性相似度(S)≥0.90;(2)描述药材整体化学成分含量的定量相似度(R,C,P,Q)应在80%~120%。以此二类相似度指标控制金银花的质量,建立了指纹图谱评价的又一新方法。

关键词 毛细管电泳 指纹图谱;投影含量相似度(C) 宏观含量相似度(R) 定量相似度(P) 金银花

分类号

Study on Capillary Electrophoresis Fingerprints of Flos Lonicerae Japonicae

SUN Guoxiang, YANG Hongtao, DENG Xiangyu, SUN Yuqing

College of Pharmacy, Shenyang Pharmaceutical University, Shenyang 110016, China

Abstract

The capillary electrophoresis fingerprints(CEFP) of Flos Lonicerae Japonicae was established to control its quality. In the capillary zone electrophoresis (CZE) pattern 50 mmol/L sodium borate contained 20 mmol/L β-cyclodextrin (β-CD) adjusted to pH 8.0 with phosphoric acid was applied as the background electrolyte. The running voltage was 12 kV and the detection wavelength was 254 nm. The Flos Lonicerae Japonicae was extracted by water and the sample solution was injected into the capillary by hydraulic pressure in 15 s. The 18 common peaks were marked according to the emerging rate of 100% and by comparing each fingerprint with the other one among the 13 samples cultivated in different places, in which chlorogenic acid was selected as the reference peak. The CEFP had good precision and reproducibility with the relative standard deviations (RSDs) of the relative migration times less than 3% and the RSDs of the relative peak areas within 6.1%. The novel concepts of the apparent quantitative similarity (R), the quantitative similarity calculated by vector projection (C) and the quantitative similarity (P) were introduced firstly. The good crude drugs should posses two merits as follows: the qualitative similarity (S) which displays the distribution of the chemical constituents in sample should be more than 0.90; the quantitative similarities (R, C, P, Q) that disclose the overall contents of the chemical constituents in sample should be within 80%120%.This method was applied in the quality control practice, and the results showed that the method could be used for the overall quality control of Flos Lonicerae Japonicae and is especially suitable for qualitative and quantitative evaluation of chromatographic fingerprints both in chemical constituent distribution and in contents.

Key words capillary electrophoresis (CE) fingerprint quantitative similarity calculated by vector shadow (C) apparent quantitative similarity (R) quantitative similarity (P) Flos Lonicerae Japonicae

DOI:

通讯作者 孙毓庆