

# 平行五波长高效液相色谱指纹图谱全息整法定量鉴定杞菊地黄丸的整体质量

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## Quantitative identification Qijudihuang Pill by integrating overall information method based on parallel five wavelength high performance liquid chromatographic fingerprints

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**摘要** 建立了杞菊地黄丸(Qijudihuang Pill, QJDHP)平行五波长(PFW)高效液相色谱(HPLC)指纹图谱,并依据系统指纹定量法结合全息整法定量鉴定了杞菊地黄丸的整体质量。采用反相HPLC法,以丹皮酚(POL)为参照物峰,分别于203、228、265、280和326 nm下检测,分别确定了51、49、52、49和47个共有指纹峰,建立了QJDHP的PFW-HPLC指纹图谱。分别以权重法、均值法和投影参数法整合5个波长下各样品的定性定量全信息,结果基于5个波长综合信息用系统指纹定量法鉴定11批QJDHP样品,其中有8批质量为好,1批为较好,质量一般为2批。评价时以均值法最为简捷和准确。本实验结果表明,平行多波长指纹图谱整合法是基于从全信息角度整体定性和定量鉴定中药质量的有效可信方法,是对HPLC-二极管阵列检测(DAD)三维指纹图谱的简化定量处理,其整体综合定量鉴定结果具有可靠性。

**关键词:** 平行五波长高效液相色谱指纹图谱 全息整合法 宏定性相似度 宏定量相似度 系统指纹定量法 投影参数法 杞菊地黄丸

**Abstract:** Parallel five wavelength high performance liquid chromatographic (PFW-HPLC) fingerprints of Qijudihuang Pill (QJDHP) were established. The quality of QJDHP was identified based on systematically quantified fingerprint method (SQFM) by the integrating overall information method (IOIM). The chromatographic fingerprints (CFPs) were developed by reversed-phase (RP) HPLC, in which 51, 49, 52, 49 and 47 co-existing peaks were marked at 203, 228, 265, 280 and 326 nm, respectively, by choosing paeonol (POL) peak as the reference peak. The natural weighted method (NWM), average method (AM) and project parameter method (PPM) were separately used to integrate the different chemical qualitative and quantitative information from different PFW-HPLC fingerprints. By using the IOIM based on SQFM, the qualities of DMS2, DMS4, DMS5 and DMS6 (2 grade) were identified as very good; DMS1, DMS3 and DMS10, DMS11 (3 grade) as good; DMS9 (4 grade) as fine; DMS7 (6 grade) as common, in which DMS8 was regarded as moderate (5 grade) by the AM and as common(6 grade) by PPM. The qualities of 11 batches of QJDHP were identified, in which 8 batches were above the good level, 1 batch was fine level and two batches were common level. Therefore AM was the most accurate and simple method to integrate all the information. The experimental results indicated that the IOIM based on the PFW-HPLC can be effectively used to identify qualitatively and quantitatively the quality of Chinese traditional medicine from overall information, which is a reliable method and also can quantitatively simplify the bountiful information of HPLC-DAD (diode array detection) fingerprints. In fact, the comprehensive identification ability of IOIM is the most reliable and effective one.

**Keywords:** parallel five wavelength high performance liquid chromatographic (PFW-HPLC) fingerprints integrating overall information method (IOIM) macro qualitative similarity (Sm) macro quantitative similarity (Pm) systematically quantified fingerprint method (SQFM) project parameter method Qijudihuang Pill (QJDHP)

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