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HPLC同时测定连花清瘟胶囊中绿原酸、连翘苷、大黄酸、大黄素和大黄酚的含量

Determination of Chlorogenic Acid, Forsythin, Rhein, Emodin and Chrysophanol in Lianhuan Qingwen Capsules by HPLC

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中文关键词： 连花清瘟胶囊 高效液相色谱法 绿原酸 连翘苷 大黄酸 大黄素 大黄酚

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中文摘要：

目的 建立HPLC同时测定连花清瘟胶囊中的绿原酸、连翘苷、大黄酸、大黄素和大黄酚的含量。方法 采用Agilent C_{18}(4.6 mm×250 mm，5 μm)色谱柱，流动相为乙腈-0.1%磷酸溶液，梯度洗脱(0 min→10 min→20 min→30 min→45 min→53 min，乙腈：10%→10%→20%→30%→68%→75%)，流速：1.0 mL?min^{-1}，检测波长：0~15 min为327 nm，15~35 min 为205 nm，35~43 min为230 nm，43~48 min为221 nm，48~55 min为224 nm；柱温32 ℃。结果 可在55 min内完成对绿原酸、连翘苷、大黄酸、大黄素和大黄酚的色谱分析，主成分峰与相邻的色谱峰之间分离度均>2.0；各测定成分的线性范围分别为0.444 5~7.112 μg(r=0.999 6)，0.167 8~2.684 μg(r=0.999 9)，0.031 0~0.496 3 μg(r=0.999 5)，0.031 5~0.504 μg (r=0.999 7)，0.065 5~1.048 μg(r=0.999 9)；平均加样回收率(n=9)分别为102.2%(RSD=0.5%)，101.0%(RSD=0.8%)，98.32% (RSD=0.5%)，95.83%(RSD=0.6%)，102.65%(RSD=0.3%)。结论 本方法简便，准确，可用于评价莲花清瘟胶囊的质量。

英文摘要：

OBJECTIVE To develop an HPLC method for determination of chlorogenic acid, forsythin, rhein, emodin and chrysophanol in Lianhuan Qingwen capsules. METHODS The sample was separated on an Agilent C_{18} column(4.6 mm× 250 mm, 5 μm) with a mobile phase consisting of acetonitrile-0.1% acetic acid in gradient elution(0 min→10min→20min→30min→45min→53min, acetonitrile 10%→10%→20%→30%→68%→75%) at the flow rate of 1.0 mL?min^{-1}; at 0-15 min, the detection wavelength was 327 nm, at 15-35 min, the detection wavelength was 205 nm, at 35-43 min, the detection wavelength was 230 nm, at 43-48 min, the detection wavelength was 221 nm, at 48-55 min, the detection wavelength was 224 nm, and the column temperature was 32 ℃. RESULTS The results showed that all

the components were well separated in 55 min by HPLC. Each main component chromatographic peak separation resolution was >2.0, the linear ranges and correlation coefficients were 0.444 5-7.112 μg(r=0.999 6), 0.167 8-2.684 μg(r=0.999 9), 0.031 0-0.496 3 μg(r=0.999 5), 0.031 5-0.504 μg(r=0.999 7), 0.065 5-1.048 μg(r=0.999 9), respectively. The sums of average recovery(n=9) were 102.2%(RSD=0.5%), 101.0% (RSD=0.8%), 98.32%(RSD=0.5%), 95.83%(RSD=0.6%), 102.65%(RSD=0.3%). CONCLUSION The method is convenient, accurate, and can be used for quantitative determination of the preparation.