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HPLC-UV波长转换法测定玄参药材及饮片中哈巴苷与哈巴俄苷的含量

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中文摘要:目的: 建立同时测定中药玄参中哈巴苷与哈巴俄苷的HPLC-UV双波长含量测定方法,考察炮制对2种成分含量的影响,提出玄参药材和饮片中哈巴苷和哈巴俄苷的含量限度建议。 方法: 应用Agilent Technologies ZORBAX SB- C_{18} (4.6 mm×250 mm, 5 μm)色谱柱,以乙腈-0.03%磷酸水溶液为流动相,进行梯度洗脱,流速1.0 mL·min^{-1},柱温为25 ℃,采用双波长检测13 min前用210 nm,13 min以后用280 nm作为检测波长。 结果: 哈巴苷和哈巴俄苷能够达到很好的分离。哈巴苷线性范围为0.054 9~1.46 μg;哈巴俄苷线性范围为0.022 5~0.900 μg。哈巴苷与哈巴俄苷平均回收率分别为98.1%, RSD 2.4%(n=9);98.8%,RSD 4.3%(n=9)。10批玄参商品药材中含量哈巴苷为0.277%~0.620%,哈巴俄苷为0.078%~0.362%;10批玄参商品饮片中含量哈巴苷为0.276%~1.059%,哈巴俄苷为0.059%~0.183%;即哈巴苷平均含量玄参饮片(0.567%)高于药材(0.448%),哈巴俄苷平均含量饮片(0.128%)低于药材(0.237%)。而同批次玄参药材在自制加工成饮片后哈巴苷含量值升高13.7%~96.0%,哈巴俄苷含量值降低11.0%~73.9%。 结论: 所建立的含量方法操作简便,结果准确,可用于玄参质量控制。玄参药材加工成饮片的过程可使哈巴苷含量值升高、哈巴俄苷含量值降低。建议玄参药材及饮片均以其中哈巴苷和哈巴俄苷总含量以干燥品计算应不低于0.45%为质量标准。

中文关键词:玄参 哈巴苷 哈巴俄苷 高效液相色谱法

Determination of harpagide and harpagoside in Scrophulariae Radix by HPLC-UV

Abstract: Objective: To develop a method for the determination of harpagide and harpagoside in Scrophulariae Radix (Xuanshen) by HPLC-UV under double wavelength, and to study the changes of these two constituents during processing, and to set the limitation of harpagide and harpagoside contents in crude drug and sliced pieces of Xuanshen. Method: The analyses were performed on an Agilent Technologies ZORBAX SB-C_{18} (4.6 mm×250 mm, 5 μm) eluted with acetonitrile-water (containing 0.03% phosphoric acid) in gradient model. The flow rate was 1.0 mL·min^{-1}. The column temperature was 25 ℃. The UV detector wavelength was set at 210 nm before 13 min and then changed to 280 nm. Result: Harpagide and harpagoside were separated well. The linear calibration curves were obtained over of 0.054 9-1.46 μg for harpagide(r=0.999 9,n=7),0.022 5-0.900 μg for harpagoside(r=0.999 8,n=9);The recoveries (±RSD)% were 98.1(±2.4)% for harpagide and 98.8(±4.3)% for harpagoside. The contents of harpagide were 0.277%-0.620%, harpagoside were 0.078%-0.362% in Xuanshen, and harpagide were 0.276%-1.059%, harpagoside were 0.059%-0.183% in Sliced Xuanshen, respectively. After the processing of Scrophulariae Radix, the content of harpagide increases 13.7%-96.0%, while harpagoside decreases11.0%-73.9%. Conclusion: This method is simple, accurate, and can be used for the quality control of Scrophulariae Radix. We propose that the total content of harpagide and harpagoside in either crude drug or sliced pieces of Scrophulariae Radix should not be less than 0.45%.

keywords: Scrophulariae Radix harpagide harpagoside HPLC

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