



马临科, 方翠芬, 李文庭, 赵维良. HPLC-MS/MS测定延胡索中的12种农药残留[J]. 中国现代应用药学, 2014, 31(4): 470-474

HPLC-MS/MS测定延胡索中的12种农药残留

Simultaneous Determination of 12 Pesticide Residues in Corydalis Rhizoma by HPLC-MS/MS

投稿时间: 2013-09-19 最后修改时间: 2014-04-02

DOI:

中文关键词: [延胡索](#) [多农药残留](#) [液相色谱-串联质谱法](#) [安全监测](#)

英文关键词: [Corydalis Rhizoma](#) [multiple pesticide residues](#) [LC-MS/MS](#) [safety monitoring](#)

基金项目: 国家药典委员会研究基金

作者	单位	E-mail
马临科	浙江省食品药品检验研究院, 杭州 310004	marlink78@126.com
方翠芬	浙江省食品药品检验研究院, 杭州 310004	
李文庭	浙江省食品药品检验研究院, 杭州 310004	
赵维良*	浙江省食品药品检验研究院, 杭州 310004	zwl@zjyj.org.cn

摘要点击次数: 35

全文下载次数: 22

中文摘要:

目的 建立液相色谱-串联质谱法测定延胡索药材中12种农药残留的方法。方法 延胡索样品用乙腈提取, 过N-丙基乙二胺(PSA)柱净化, 用ZORBAX Eclipse plus C18色谱柱分离, 以电喷雾电离串联质谱在正离子多反应监测(MRM)模式下进行测定, 内标法定量。结果 12种农药成分在相应的测定范围内线性关系良好, 相关系数在0.997 7~0.999 9内, 加样回收率范围为65.5%~117.8%, RSD范围为0.4%~4.5%, 各农药的检出限为0.1~2.5 $\mu\text{g} \cdot \text{kg}^{-1}$ 。结论 本方法简便、灵敏、重现性好, 可用于延胡索药材中12种农药残留的同时检测。延胡索药材农药残留量甚微, 符合安全性要求。

英文摘要:

OBJECTIVE To establish a method based on LC-MS/MS for the determination of 12 kinds of pesticide residues in Corydalis Rhizoma. METHODS Corydalis Rhizoma samples were extracted with acetonitrile, and purified by N-propylethylenediamine(PSA) column. The prepared samples were analyzed using LC-MS/MS in multiple reaction monitoring(MRM) mode by positive electrospray ionization with a ZORBAX Eclipse plus C18 column as the analytical column. The pesticides were quantified by the internal standard method. RESULTS All the 12 pesticides showed good linearity in their reasonable range($r=0.9977-0.9999$), the recoveries were 65.5%-117.8%, with the RSDs of 0.4%-4.5%. The limits of detection were 0.1-2.5 $\mu\text{g} \cdot \text{kg}^{-1}$. CONCLUSION The method established in this study is simple, sensitive and reproductive which can be applied on the analysis of pesticide residues in Corydalis Rhizoma. The quality of Corydalis Rhizoma is basically good for the safety although it contains a trace of several pesticides residues.

