



UPLC-MS同时测定千里光和欧洲千里光中阿多尼弗林碱和千里光碱的含量

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作者中文名	作者英文名	单位中文名	单位英文名	E-Mail
熊爱珍	XIONG Aizhen	上海中医药大学 中药研究所 中药标准化教育部重点实验室,上海 201203	MOE Key Laboratory for Standardization of Chinese Medicines, Institute of Chinese Materia Medica, Shanghai University of Traditional Chinese Medicine, Shanghai 201203, China	
杨莉	YANG Li	上海中医药大学 中药研究所 中药标准化教育部重点实验室,上海 201203	MOE Key Laboratory for Standardization of Chinese Medicines, Institute of Chinese Materia Medica, Shanghai University of Traditional Chinese Medicine, Shanghai 201203, China	cpuyi@126.com
杨雪晶	YANG Xuejing	中国药科大学 生药学研究室,江苏 南京 210038	Department of Pharmacognosy, China Pharmaceutical University, Nanjing 210038, China	
王长红	WANG Changhong	上海中医药大学 中药研究所 中药标准化教育部重点实验室,上海 201203	MOE Key Laboratory for Standardization of Chinese Medicines, Institute of Chinese Materia Medica, Shanghai University of Traditional Chinese Medicine, Shanghai 201203, China	
王峥涛	WANG Zhengtao	上海中医药大学 中药研究所 中药标准化教育部重点实验室,上海 201203 中国药科大学 生药学研究室,江苏 南京 210038 上海中医药大学 中药研究所 上海市复方中药重点实验室,上海 201203	MOE Key Laboratory for Standardization of Chinese Medicines, Institute of Chinese Materia Medica, Shanghai University of Traditional Chinese Medicine, Shanghai 201203, China Department of Pharmacognosy, China Pharmaceutical University, Nanjing 210038, China Shanghai Key Laboratory for Compound Chinese Medicines, Institute of Chinese Materia Medica, Shanghai University of Traditional Chinese Medicine, Shanghai 201203, China	

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中文摘要:目的:建立同时测定千里光和欧洲千里光中阿多尼弗林碱和千里光碱含量的UPLC-MS方法。方法:采用Waters公司UP LC-Micro 2000仪器ESI⁺离子模式下选择离子监控,以野百合碱为内标计算浓度;色谱分离采用Shiseido Capcell Pak MG色谱柱(2.0 mm×50 mm,3 μm),流动相为乙腈-0.5%甲酸水溶液梯度洗脱,流速0.3 mL·min⁻¹,柱温30 ℃,进样量2 μL。结果:阿多尼弗林碱进样质量浓度在1.02~816.00 μg·L⁻¹呈现良好线性关系($r=0.998\ 0$),50%,100%,150%浓度水平下加样回收率在95.73%~103.0%,RSD不超过2.5%;千里光碱进样质量浓度在1.08~860.56 μg·L⁻¹呈现良好线性关系($r=0.997\ 6$),50%,100%,150%浓度水平下加样回收率在95.67%~101.5%,RSD不超过2.3%;方法重复性及精密度良好。结论:所建立UPLC-MS方法灵敏、准确、重现性好,适用于千里光和欧洲千里光中阿多尼弗林碱和千里光碱的含量测定;可用于千里光药材中吡咯里西啶类生物碱的限量检查以及其混用品种如欧洲千里光的监控;为千里光药材2010年版《中国药典》的质量标准研究奠定基础。

中文关键词:千里光 欧洲千里光 吡咯里西啶类生物碱 液质联用

Simultaneous quantitation of adonifoline and senecionine in *Senecio* herbs by UPLC-MS

Abstract:Objective: To develop an UPLC-MS method for the simultaneously quantitation of adonifoline and senecionine in *Senecio* herbs. Method: UPLC-Micro 2000 was used for quantification in SIR mode under ESI⁺. Monocrotaline was used as the internal standard. Chromatography was performed on a Shiseido Capcell Pak MG (2.0 mm×50 mm, 3 μm) column at 30 ℃ using an gradient elution of acetonitrile-0.5% formic acid in water at the flow rate of 0.3 mL·min⁻¹. The injection volume was 2 μL. Result: Good linearity was obtained for quantitation of adonifoline over the range of 1.02-816.00 μg·L⁻¹ ($r=0.998\ 0$). And recoveries at different concentration levels were between 95.73% and 103.0% with RSDs no more than 2.5%. For quantification of senecionine, the linear range was between 1.08-860.56 μg·L⁻¹ ($r=0.997\ 6$). And recoveries at different concentration levels were between 95.67% and 101.5% with RSDs no more than 2.3%. Good reproducibility and precision were also achieved. Conclusion: The new developed UPLC method is sensitive, accurate and reliable enough for the quantitation of adonifoline and senecionine in *Senecio* herbs thus can be used for the limit detection of pyrrolizidine alkaloids in *S. scandens*. It can also be used for the identification of fake drugs of *S. scandens* such as *S. vulgaris*. The developed method was served for the quality evaluation of Herba *Senecionis Scandensis*.

Keywords: *Senecio scandens* *Senecio vulgaris* pyrrolizidine alkaloids UPLC-MS

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