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UPLC-MS/MS测定抗风湿中成药中非法添加布洛芬、双氯芬酸钠和吲哚美辛

Detection of Ibuprofen, Didofenac Sodium and Indometacin Illegally Added in Traditional Chinese Medicine Preparation by UPLC-MS/MS

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中文关键词: [超高效液相色谱](#) [质谱](#) [中成药](#) [抗风湿](#) [非法添加](#)

英文关键词: [UPLC](#) [MS](#) [Chinese medicine preparation](#) [anti-inflammatory](#) [illegally added](#)

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中文摘要:

目的 建立抗风湿中成药中非法添加布洛芬、双氯芬酸钠和吲哚美辛3种化学成分的UPLC-MS/MS检测方法。方法 以BEH-C₁₈ (2.1 mm×100 mm, 1.7 μm) 色谱柱分离, 串联四级杆质谱仪检测, MRM模式进行定性定量分析, 样品以甲醇为溶剂超声提取, 检测添加在中成药中的布洛芬、双氯芬酸钠、吲哚美辛3种化学成分。结果 3种抗风湿性化学成分质谱检测的线性范围宽, 相关性好, $r^2 \geq 0.9967$; 重复性RSD为1.7%~4.7%; 方法回收率为95.1%~104.2%; 定量限为4.0~11 μg·mL⁻¹; 日间精密度的RSD (n=9) 为1.7%~4.1%。结论 本方法专属性强, 操作简单, 快捷, 可作为中成药中非法添加布洛芬、双氯芬酸钠和吲哚美辛3种抗风湿性化学成分的有效检测方法。

英文摘要:

OBJECTIVE To develop a UPLC-MS/MS method to determine ibuprofen, didofenac sodium and indometacin illegally added in traditional Chinese medicine preparation. METHODS The analysis was performed by a UPLC-MS/MS system of Waters ACQUITY UPLC/Quattro Premier, with BEH-C₁₈ (2.1 mm×100 mm, 1.7 μm) column. Multiple-reaction monitoring (MRM) was performed to identify and quantify ibuprofen, didofenac sodium and indometacin, which were extracted with methanol by ultrasonic. RESULTS Three linear calibration curves were obtained with $r^2 \geq 0.9967$. The precision of the method were

showed by RSD (n=6) ranged from 1.7% to 4.7%. The recoveries were determined at three concentrations and ranged from 95.1% to 104.2%. The ranges of LOQ were from 4.0 $\mu\text{g}\cdot\text{mL}^{-1}$ to 11 $\mu\text{g}\cdot\text{mL}^{-1}$ and the RSDs (n=9) of inter-day precision were from 1.7% to 4.1%. CONCLUSION The method is specific, simple and fast to detect ibuprofen, didofenac sodium and indometacin illegally added in traditional Chinese medicine preparation.

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